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OBSERVATIONS
ON
SOME FORMS OF
RHEUMATISM
PREVAILING IN INDIA.

BY ASSISTANT SURGEON JOHN GRANT MALCOLMSON,
MADRAS MEDICAL ESTABLISHMENT.

“Whoever collects and records his facts with care and fidelity, renders some contribution to the advancement of the medical art.” *Medico-Chirurgical Review.*

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OBSERVATIONS

ON

R H E U M A T I S M.

I shall confine myself in the following pages to such practical observations on rheumatism, as it occurs in India, as may not readily occur to a surgeon on his first arrival in the country; to remarks on various disputed points in the history and treatment; and to a few novel observations, which if confirmed by the experience of others will lead to improvement in our knowledge of the disease, and to some valuable practical inferences.

Of the disease called “ Burning of the feet ” on which no direct information is to be obtained from books, very extensive experience in different circumstances, and much patient enquiry, would be required to enable any individual to draw up a full account, but as every fact contributed to its history is of great importance to the welfare of the Madras army, I shall communicate what I know regarding it, however inadequate to the expectations of the Board this may be.

Rheumatism in Natives.

There is no disease except fever more prevalent amongst the sepoys than rheumatism, and although not often fatal, has been stated, and probably with

truth, to be the cause of more men being lost to the service than all other diseases put together.

Neither the general returns of the army nor those of particular corps, afford any correct data by which to estimate the loss of life from rheumatism; as it is often confounded with beriberi, to which the greater number of deaths noticed in the "General abstracts of returns" "of Native Sick"* are to be referred, and with various other complaints which supervene more readily in constitutions broken down by this disease; and great numbers are discharged from the service or invalided, whose future history cannot be learned.

It seldom prevails in an acute form, but now and then cases occur, which can often be traced to the direct effects of cold and wet, especially on the setting in of the rains when sultry heat is suddenly followed by storms of rain and wind.

These cases sometimes present the ordinary symptoms of the acute disease in England, as pain and heat in the joints, quick pulse, febrile excitement and foul tongue, and are benefited by treatment of the same kind but more cautiously used.

In a few examples a general bleeding will be advantageous; emetics and purges at the commencement remove the general symptoms; and when the joints are hot leeches never fail to be useful, and if the pain shifts to other joints they are to be repeated in smaller numbers. At first 16 or 24 may be applied, but afterwards not more than 8 or 10. Leeches in India take away an ounce of blood each, and as the effect on a joint is obtained by a few ounces, we must not carelessly order the abstraction of more, as the application will probably be frequently requir-

* Printed at Madras in October, 1831.

ed. Neither general or local bleeding lessen the liability of other parts to suffer, and the natives bear evacuations ill, especially in this disease which passes quickly into its ordinary chronic form, which is always attended with an atonic state of the constitution. Blisters have appeared to be injurious in the acute stage in keeping up fever, and do not remove the pains or they cause them to pass into other joints; and as that is short and more under the power of other remedies, it is proper to defer their use till the second stage, when they are very effectual in removing pain from individual joints. There is less chance of metastasis to other joints in the local affection following acute attacks, than in any other form. The pains are occasionally worse in bed, but whatever may be the case in Europe, it is not the heat of the bed clothes that causes it either in Europeans or natives, as they come on frequently when the sun gets low and continue for the early part of the night, sometimes for an hour or two only. They are not unfrequently attended with some febrile excitement, which is either part of the disease itself, in feverish stations difficult to be distinguished from the intermittent of the place, the fever running into the prevailing form; or it is a complication caused by the same exposure as brought on the rheumatism, or by the great liability of patients in every disease to contract the prevailing endemic. It will be easy to distinguish them, when swelling in the joints take place, when the pains are not confined to the situation of fever pains, and when they are aggravated in the evening while the fever observes a different period. The following case will illustrate some of these remarks.

Case 1st. Meer Hyder, ætat 19, a muscular man; five days before admission had pain and swelling of the knees followed by fever, strong quick pulse and increase of pain. Twentyfour leeches gave little relief on the 2d day, and were repeated on the 3d with no better effect. He was then bled to 24 oz. and this was repeated to 12, which didnot prove buffy and gave great relief to the knees, but the pains soon affected the other large joints and the fingers. Antimonial powder was useless, cold affusion was employed and caused copious sweats but these gave no relief. The tendons of the wrists, hands and arms which he did not complain of at first, were more painful than other parts. He was relieved by anodynes and frictions and discharged the succeeding month.

When there is any fever of an intermittent type, the bark or quinine is usefully combined with other treatment, as without them the fever will often run on for days, keeping up and aggravating the rheumatic affection even when the mouth is sore; and when mercury removes the fever, it is more apt to recur on the ptyalism beginning to subside.

A small number of cases occur, in which the chest is affected with inflammation at the same time and probably from the same cause as induced the acute rheumatism, but others in which pleurisy is a secondary complaint following rheumatism of the parietes of the chest, have been observed.

Case 2. Venketasawmy, ætat. 22. Admitted June 25th. Complaining of pains of hips, back and sides increased on moving, with some swelling and tenderness; chest is now affected with pain increased on full inspiration, short cough and scanty mucous expectoration; pulse quick, skin warm. Leeches

were applied, followed by repeated blisters and the chest was relieved. 7th July. Complains only of weakness and of pain of hips. 15th. Has used Dover's powder without benefit. Pains all over him. 27th. Pains gradually left him but returned today in right knee. 5th August. Pain removed by a blister and he is discharged. The explanation of the symptoms in this case, is the same as that given by Baillie of the frequency of pleuritic affection in England; viz. the number of anastomoses between the vessels of the costal pleuræ and the external parts, and "hence whatever may act upon these external vessels, may be supposed capable of exciting an increased action, or of producing an accumulation of blood in the internal ones;" to which I would add, the direct spreading of the rheumatic inflammation from the fasciæ and muscles to their internal investing membrane. As far as a limited number of observations go, this form of rheumatism is most common amongst recruits; but how far it depends on inflammations being most frequent at this period of life; on the change from partial starvation to full feeding, or on the new and, to young soldiers, teasing duties to which they are now subject, I am unable to say. With the exception of well marked benefit derived from the above mentioned measures, from warm baths, and from small doses of calomel combined with antimonials, and in a few cases where one joint only was affected from cold applications; the cases of common acute rheumatism in natives to which I have at present opportunity of referring, are too few to enable me to state positively the effects of the various remedies used, and they may safely be inferred from what is said of them under other heads.

But it is seldom that we are called on to treat these well marked forms of acute rheumatism in sepoys, in whom it is not often characterized by more than its coming on suddenly from cold, and, perhaps, in being apt to shift from joint to joint and being attended with slight fever or a little constitutional disturbance. The important circumstance in particular, of heat in the affected joints, on which so much weight has of late years been laid by Professor Elliotson and others, as indicating active rheumatism requiring free local bleeding and antiphlogistic remedies, is very seldom met with; and the rule of practice confining evacuations to such examples, and to those in which the pain is increased by heat, is not applicable to the Indian forms of the complaint either in Europeans or natives. When the pains are severe and the pulse quick but small, and there is aggravation of the symptoms with fever at night, the case approaches to the acute form, but active antiphlogistic remedies must not be used, and are either inefficacious or injurious. In these cases there is frequently a good deal of disorder in the abdominal secretions; the tongue is loaded, the stools are dark, and there may be pain in some part of the abdomen. Small doses of calomel with antimonials are the best remedies, and the symptoms rapidly leave on the gums getting sore.

But these acute and subacute forms of rheumatism are of little practical importance compared to the common chronic affection, which whether succeeding the acute or arising without evident cause, is a disease of great obstinacy, little under the influence of medicine and lays the foundation of numerous constitutional ailments. When it attacks a heal-

thy person, it may at first be confined to a single joint, which is followed by the affection of others, generally without any relief to the one first suffering. The pain is not generally very acute nor always worse at night, and often is little more than an aching and weakness of the joint.

The parts are most frequently affected nearly in the following order; the knees, ancles, heels, elbows, wrists, hips, shoulders, back and chest. The pain in the knees is always much complained of, and is generally referred to the whole joint, but sometimes a point of the inner condyle is acutely painful and tender, in other instances the patient presses on the patella, or on each side of the tendon of the rectus from the bursæ being principally diseased. There is no heat or swelling and the patients are frequently suspected of skulking and sent to their duty; when, after a month or two of suffering and aggravation of the complaint by exercise (at this period very hurtful), and the supervention of swelling of the joints, a puffy feel and enlargement of the bursæ, the hands or ancles are tumefied, or the patient wastes, the mistake is seen. The pain in the ancles is usually situated on either side, often a little below the joint, at others in front in the situation of the annular ligament. The heels frequently suffer severely and the pain extends up the tendo achillis and swelling at its insertion is common; but not only does the tendinous substance of this part suffer, but the tendons of the wrists and hands have become painful and in a few instances have swollen, without any reference to the origin of the disease as caused by cold, abuse of mercury, venereal, &c.

The soles of the feet, the calves of the legs or flesh

of the thighs suffer more rarely than the loins or hips. The roots of the toes, the tarsal ligaments, the back of the hands and joints of the fingers are frequently swollen and painful; and the muscular parts of the back, the sides of the chest, the ribs and the sternum often become painful, tender, and swell. And in many rheumatic cases where the patients were ascertained to have had no venereal complaint for years, nor to have taken mercury, the shin bones have suffered from pain and even from swelling. The tissues then, that appear most generally involved in the disease are the ligamentous and tendinous, the periosteum, and more rarely the muscular, and we shall see reason to believe that many others are occasionally engaged. The complaint is sometimes strictly local, as I have traced it to cold applied to the affected part only, and the liability of other parts to take on the same morbid action depends on the facility with which all morbid actions are propagated from one part of fibrous tissues to another. Those that have least tendency to attack other parts are the puffiness of the bursæ and pain of the bones.

These symptoms may come on without any constitutional affection and remain for a long time, and relapses may attack the patient again and again before his health suffers further injury, but in a very large proportion of protracted cases, the patient loses flesh and strength and a cachectic habit is the consequence: he languishes in hospital or struggles with his duties, and is looked upon as a burden to the regiment and is frequently unjustly supposed to be a malingerer, and because the skill of the surgeon is unable to restore him to health or fully to understand the obscure train of symptoms which afflict him, he

often meets with little sympathy, and the repute of European medical science is injured in the eyes of those, into whom it is of the greatest importance to instil different sentiments. The sepoys are very little given to frequent an hospital and malingering is very rare amongst them, except in certain circumstances of harassing service; and those who are supposed most addicted to it, I have usually found to be of the class most subject to low forms of rheumatism. These are most commonly young weakly lads of bad constitution, and often subject from early youth to pains of the limbs, which are induced or aggravated by the fatigue of drill, and depression of spirits from a new mode of life, by which their habitual ails are aggravated, and not uncommonly end in confirmed marasmus. In examining recruits, it is of the greatest consequence both for the good of the service and justice to the individuals themselves, to reject men of this description; but as the best sepoys are frequently, on enlistment, thin meagre boys who have lived on coarse and insufficient food, considerable skill is necessary to distinguish those likely to turn out well from others. The general aspect of the man is the most certain guide, which is only to be learned by experience, but if the abdominal viscera seem healthy, and the skin soft and devoid of minute dry scales or other affections, there is every chance of his constitution improving on his being taken into pay, which will afford him abundance of food. Very tall lads, except they are northern Telingeas, are very subject to illness of all kinds, especially to atonic rheumatism, and are seldom effective soldiers. I have seen short but active lads rejected, discharged, or kept back from promotion,

while those taken in their room or put over them on account of their height, were useless to the service from want both of mental and bodily vigour. The symptoms of a depraved habit, which is sometimes the cause of the rheumatic pains we are considering, and at others follows from their long continuance, are loss of strength, great emaciation, the patient loses his erect position in walking, and all his motions are performed in a languid manner, his countenance is sometimes puffy or pale, he is desponding, indolent and averse to all exertion. His appetite is bad, his bowels costive and the evacuations are often dark. His abdomen is puffy or tympanitic especially after eating, and he complains of indigestion. The tongue is generally swollen and white. In aggravated cases there is a burning sensation in the abdomen, which is extremely distressing and often evidently connected with the other symptoms, and probably depends on chronic inflammation of the mucous membranes. In this form of the complaint the patient gradually sinks, and is too often but little benefited by treatment. A few months leave to return to his native village will in many cases restore him to health; and I have reason to believe, that it is in this form of disease that men who have been always sick, recover on obtaining their discharge from the service; a circumstance which is sometimes ascribed to the patients having imposed on the surgeon, and at others to the efficacy of native medicines. But that the change may be useful, it should be tried early and before the powers of life are irreparably weakened and organic disease has commenced. During the course of these symptoms the skin is dry, rough and is covered with mea-

ly white scales, or an obstinate psora occupies the buttocks, thighs and other parts. These appearances are not uncommon in India, but prevailed to a much greater extent amongst the troops at Rangoon, and were often the first complaints which ushered in the rheumatic pains and marasmus dependent on bad food, moist climate and fatigue. It was sometimes accompanied with spongy gums and other scorbutic symptoms.

The marasmus ends, when fatal, in diarrhoea and dysenteric symptoms, probably depending on intestinal ulceration, like the analogous cases from Rangoon, but the pulmonary symptoms and burning of the feet so frequent in the latter are little if at all known in India. Allied to this, and to an important train of symptoms in Europeans, are a few cases I have met with, of pains in the knees, ancles and soles of the feet being combined with foul indolent ulceration of the legs and feet, foul tongue and irritable bowels. In many cases a scrophulous taint is the apparent cause, and that disease manifests itself in the progress of the disease: in others venereal or mercurial action can be traced to have laid the foundation of the complaint, and it is remarkable that the joints, muscular parts and tendons suffer from these causes, as well as the periosteum and bones.

Rheumatism is especially apt to occur in natives and Europeans after sloughing venereal sores treated by mercury. The dissipation of the Mohurru, the fruitful source of disease, is also a cause, and in weakly lads the confinement consequent on slight accidents or disease is sufficient to predispose to rheumatism, and this is remarkably the case with fever which often lays the foundation for protracted

affections of the limbs. This is sometimes the mere consequence of the debility, but it is also a direct effect of fever, even when no mercury has been taken, and is not unfrequently most severe in the parts in which the pains had been fixed during the pyrexial period; nor can it be wondered at, that the state of parts which give rise to these severe achings in the bones, joints and flesh should, if long continued, lay the foundation of local disease; accordingly it is in cases of neglected fever that these secondary complaints show themselves. The best marked examples I have seen, have been in patients who took no medicine, but continued to go through the routine of their duty for weeks or months with intermittent upon them.

The parts most affected are the shin bones, knees, thighs, and back, and sometimes the head, and these may swell and be worse at night, like mercurial pains. When the complaint is once established it may fix in one limb, which will waste as if the disease were local; and although the pains exist totally unconnected with fever, they are always aggravated by any new paroxysm. The occurrence of this new affection is a powerful inducement to the early and active employment of quinine. The following case of a European serjeant will illustrate these remarks, which apply equally to natives and Europeans. I fear it will prove tedious, but the subject is one of great practical importance, and abridgment would deprive it of the value it possesses not only as illustrating this particular sequela of fever, but also in reference to other important practical subjects. I have every reason to believe that he had had no venereal symptoms for years, and he had undergone no

mercurial course, unless the slight one noticed in the reports.

Case 3d. John Jamison, serjeant, ætat. 25. In India 8 years. Admitted 2d April 1832, at 7 P. M. Got severe fever on the Neilgherry hills 9 months ago, and has not been free of it since. At Madras the left hypochondrium became painful, and he says, that he was some days in hospital without benefit. Fever comes on every day at 10 A. M. with a slight cold fit, and is occasionally more severe than it is in general, but he seldom escapes altogether. Pain in the forehead and occiput during the paroxysm, but is now quite free from it. There is a fixed pain of the hollow on the right side of nucha from occiput to the bottom of the neck, increased on motion but not on pressure. Spleen enlarged and tender, and during the fever, particularly the cold stage, the pain is aggravated checking the breathing and shooting up below the ribs. Both shoulders and arms down to the elbows are painful, and he feels the upper extremities weak. A tender and painful spot in centre of epigastric region; pain is dull, constant, and of three or four days standing. Bowels regular, stools said to be dark, urine high in the morning. During the fit the upper part of the abdomen swells and the whole of the cavity is tumid. Tongue smooth with a slight slimy coat on centre, the rest very smooth and rather pale. Pulse now 60, small; skin clammy. The paroxysm yesterday lasted till 9 P. M. and the sweating stage most of the night. Sleeps badly, no appetite, skin sallow, thirst with the fever. Scrophulous marks on the neck, hair auburn, and pupils large. Three stools from cathartic pills. Hirudines xvi hypoch. dextro et epigast. Habt. stat. quinae sulph. gr. v, et reptr.

q. q. hora ad dosin iv. 3d. Vespr. Took 4 doses of the quinine, no fever, some cold perspiration. Headach from three till five, and has still some pain of right side of occiput. Side and epigastrium much easier. Takes a full inspiration without pain. Four stools said to be dark. Pulse 64. *R* Calomel. gr. iii, ext. colocynth. c. gr. x, antimon. tart. gr. $\frac{1}{2}$, ft. pil. ii h. s. s. Hirudines xii occipit. 4th. Severe headach since 10 A. M., sweating most part of the night and the face, legs and arms are now bedewed with a cold moisture, left side and epigastrium very easy; one stool, not kept; tongue slimy. *R* Calomel. gr. v, pulv. jalapæ gr. xxv, ft. pulv. stat. sumend : hirudines xx occipit. et. temp. Milk diet. Vesp. Five stools of more natural appearance, not kept. Had 8 grains of quinine at 9 A. M., no fever. Headach continues, no relief from the leeches, no sweating since visit, skin natural, pulse 74, tongue cleaner. Emplast. vesicat. nuchæ. *R* Pulv. Doveri gr. x, calomel. gr. iii, ft. pulv. h. s. s. 5th. Perspired and felt easier after the powder. Head was shaven with relief to the headach. Blister not applied till morning having fallen asleep, and had a good night's rest, no fever or abdominal pain, one stool. Pulse 68 small, skin cool and moist, Tongue better. *R*. Pulv. rhei \mathfrak{z} ss, pulv. jalapæ gr. v, magnesiae \mathfrak{z} i, conf. aromat. gr. v, aq. menthæ \mathfrak{z} iii ft. haust. stat. sumend. ; post horam habt. quinæ sulph. gr. viii, in pil. Bread pudding. 5th. Vespere. One stool. Had 2 doses of quinine. Slight pain wandering about the anterior part of the head ; cold sweats at 1 and 5 P. M., skin now natural. To take 12 grains of cathartic extract. 6th. Slept all night ; no fever, sweats or headach ; neck and pains of shoulders and limbs the same. Spleen tender when pressed on, where

it projects beyond the ribs. Some appetite. Tongue less pale. Pulse 68, weak; 2 stools. Hirudines xii hypoch. sinist. & Quinæ sulph. gr. ii ft. pil. q. q. hora sumend. ad dosin vi. Vesp. No stool, no fever, wandering pains of head. & Ol. croton. gtt. i, ext. hyociam. gr. iv, ol. menthæ gt. ii, ft. pil. h. s. s. 7th. Rested ill, no fever but felt as if much tired. Two stools without griping, they are copious, feculent and almost chalky in color. No headach. No pain on strong pressure under the right false ribs or on epigastrium; on full inspiration a little pain in left side. Pulse 70, strong. Appearance improved. Omitt. quinæ sulphat. Habeat calomel. gr. v, in pilul. statim, etiam magnes. sulphat. 3 vj. 8th. Vesp. Much better. Pains particularly severe in right shoulder and arm. No stool. Rept. balneum. & Calomel. gr. iv, pulv. Jacobi gr. v, extract. colocynth. comp. gr. viij, fiat pil. ij h. s. s. 9th. Sweated from the bath but complains of its weakening him. Pain in right shoulder worse. Bears pressure under the ribs, neck nearly well, some pains in knees. Pulse 70, soft. One stool said to be dark. Appearance very much improved. Sulphat. magnesiæ 3iij. 10th. Six stools, still too light coloured. Makes no complaint unless of top of right shoulder which is tender. Pain extends to elbow. No pain of head, neck, or side even on pressure, and the spleen projects less. Tongue cleans and is not now pale, no thirst. & Pil. hydrarg. gr. iij, pulv. ipecac. gr. j, sulphat. ferri gr. iss, fiat pil. mane et vesp. sumend. 12th. Vesp. Asleep in the morning, no rest from the violent pain in right shoulder, otherwise better. One formed stool, light yellow. Tinct. opii min. xxx h. s. 14th. Improved slowly till the 14th. Severe pain of the inner part of right knee since 8 p. m.

Bowels open, spleen subsides steadily. Ammonia liniment and fomentations to the knee. 15th. Relief to pain of knee by frictions, but it increased again and 9 leeches were applied with some relief, but it prevented sleep; shoulder easy, 2 stools of better color. Contr. pil. Fetus frequenter. 16th. Pain of knee came on with violence in the evening, relieved by fomentations. Slept well after the draught. Pains now easier; 2 stools said to be pretty natural in color. Tongue still white, pulse feeble. Fetus. Contr. pil. 17th. Shoulder well, knee better. Pain of right tibia which is in two places a little swollen, since last night. Liniment. ammoniæ. Cont. pil. Madeira 2 measures. 18th. Pain has returned to the knee with some difficulty of moving the joint, and has left the shin. One stool, said to be natural. Emplast. vesicat. parvum genu. 19th. Blister rose with great relief to knee. Slept ill. One stool, Foul taste. Omittr. pil. & Pulv. rhei ℥ii, magnesiæ ʒss, confect. aromat. gr. iv, aq. menthæ ʒiii ft. haust. stat. sumend. 20th. Three stools, spleen has entirely subsided below the ribs. No pain of knee and little of shin where there is still some swelling. Repr. pil. mane et vespere. 22d. Much pain last night in right knee, two stools a day. Tongue still white and slimy. Thirst in the night, and sweated a great deal. Blister nearly healed. Omittr. pil. Infus. cinchon. c. acid. nitric. Vesp. Habt. tinct opii min. xl h. s. 23d. Much pain in the inner part of the left knee extending down the tibia all night, and slept none till morning. Shin was painful yesterday during a storm and before it (not after). Bowels open. Hirudines x genu sinist. Contr. alia. 24th. No pain in limbs since the leeches were applied; some pain and ten-

derness of spine between the scapulæ. Contr. omnia. Emplast. galban. dorso. 25th. No pain in knees, soreness along the spine. Nausea in the afternoons, ascribed to the bitters; bowels open and stools are reported to be natural, tongue and pulse the same, felt faint and sweated after the draught, slept ill. Omittr. med. Contr. liniment. R Pulv. columbæ ʒi, gum. guaiac. gr. v ft. pulv. bis die sumend. 26th. Pain in the legs better, sweats freely. Complains more of right shoulder and lower part of arm near the tendon of the biceps. No stool yesterday. Contr. pulv. et liniment. 27th. Was easy yesterday. Much pain of the outer part of the lower extremity of right biceps muscle, no swelling or redness. Arm stiff, legs well. Emplast. vesicat. parv. part. dolent. Contr. pulv. et haust. 29th. No pain of arm. Had pain of left knee yesterday, removed by frictions. The tenderness over middle dorsal vertebræ and some pain between the shoulder blades is increased on moving the arms. Bowels regular, sleeps well, appetite better. Contr. pulv. ter die et haust. h. s. Hirudines vi dorsi part. dolent. 30th. Leeches relieved the back. Knees relieved by frictions, and he slept tolerably. May 1st. Pain in the swelling of the right shin. Emplast. vesicat. part. dolent. 2d. Blister has removed the pain, complains of the border of left knee pan. Did not sleep from pain of blister. Bowels open, appetite good. Contr. med. 3d. Says he is free from pain, but he wishes to go out. Contr. haust. acid. 7th. States that he is free from complaint. There would appear to be some fulness of left side but there is no tenderness. Tongue still white but appearance on the whole pret-

ty good. Discharged to duty.¹ A case in some respects similar, followed by acute hepatitis in a native, will further illustrate the fact and bear on some important questions to be stated by and bye.

Case 4. Mahomed Jacoob after suffering from a very protracted intermittent for which he took no mercury, on its leaving him got pains in the large joints, in the thighs, legs and hams. Leeches were applied with relief to right knee, which was swollen; loins felt weak. He was now seized with severe pain in the right hypochondrium, extending to the axilla and increased on full inspiration and pressure and on attempting to lie on the left side. Easiest sitting up. Pulse 90. Twenty oz. of blood and thirty leeches relieved, and a blister removed the pain. Calomel and antimony were omitted on the symptoms being removed.

Examples of hepatic inflammation are by no means uncommon amongst natives and frequently follow other disease. The following has some features of interest, which will be more clearly understood hereafter.

Case 5. Mahomed Sahib, ætat 23. Admitted 8th August, with pains of the lower limbs ascribed to exposure during the Mohurru. Has been subject to rheumatism and has now slight evening exacerbations. An emetic, purgative, and frictions removed the pain except from the right leg. Stools changed at short intervals from white to mucous, or yellow and feculent. Sept. 4th. Pains in tibiæ only. 8th. Pain of left side and shoulder, with enlargement apparently of the spleen. No improvement under the use of blue pill, bitters, Dover's powder, mercurial frictions

¹ The fever soon after returned and nodes had formed on the shin, which were only slowly removed. *Original Note.*

to side and baths. 3rd October. Pains severe at night in all the joints, swelling of left clavicle, pulse small and quick, puffy belly in the evening, want of appetite, foul taste, vomits bile occasionally. October 18th. Pain of the side gone. Sternal end of right clavicle swollen. Stools alternately white, green and yellow. Small doses of calomel with antimony were substituted for the blue pill, the mouth was soon affected, and the pains left him, but he was still subject to paroxysms of fever which were at once removed by quinine.

Various anomalous affections of the chest supervene to rheumatism however induced, which I do not possess the means of explaining but which deserve to be carefully studied. One of these cases may be given.

Case 6. Venketaswamy, subidar, ætat. 40. March 8th. Had fever on the march from Hyderabad which was followed by pains of legs especially of tibia, and of shoulders. No fever. April 1st. Has had his mouth made sore with calomel and antimony and used blisters without benefit. Complains of debility and emaciation and of pain in the left leg. May 27th. Improved a good deal when using frictions and bitters, but pain has returned in the left thigh and leg. July 12th. Pain (except when it rains) nearly confined to left ancle which is swollen, pulse quick and weak, appetite good. September 1st. Continues to emaciate, bed ridden. 6th. Suddenly taken with swelling of the abdomen, with great pain of chest and dyspnœa, and soon after expired. The termination resembled that of many cases of beriberi, but the pains in that disease are almost exclusively situated in the muscular parts, and the bones always escape.

The well known affections of the heart so common in rheumatism in Europe are not very common, but are not unknown in India. Two cases have occurred to me in Europeans within the last year, and I find indications of it in natives.

Case 7. Ramanah. Pains in large joints. Dover's powder used without benefit, and after two months unsuccessful treatment he got pain in the left side of chest, increased on full inspiration and lying on the back, at first without dyspnœa, which supervened as the pain increased and struck through to the back, no cough. Pulse quick and small with slight fever. Twenty four leeches to the region of the heart, purgatives and antimony removed the pectoral symptoms. A lad admitted at the same time who had been long subject to rheumatism, got pain in the back of the neck, palpitations and throbbing at the heart, which appeared to depend on permanent disease. In many instances the loins suffer from simple rheumatic action, in no way differing from that affection as commonly described, and relieved by the usual treatment. In one case the affection of the loins was followed by a painful state of the testicles, which was easily removed by a few leeches. But numerous examples of rheumatic affection seem also to be connected with disorder of the nerves of the vertebral canal, which lead to troublesome symptoms very difficult to understand. In the present state of our knowledge the abstracts of a few cases, will usefully direct attention to some of the various affections thus arising.

In several examples of rheumatism, a pain below and to the left of the umbilicus has been accompanied or succeeded by severe and obstinate pain in the

loins. A man is taken ill with purging of whitish stools, with pain and hardness of abdomen; pain of loins succeeds and as well as the epigastric hardness is obstinate. Tonics did harm, blue pill, leeches, and a blister and mercurial frictions to the stomach completed the cure. Severe and protracted fever in a sepoy was followed by numbness and pricking sensations in the extremities, and to these pain of the knees and ancles, which swelled, succeeded. Syed Hommed had pains and swelling of the elbows, knees and ancles for twelve days, which were relieved by a slight sore mouth; but pricking sensations below the knees supervened, to which pain of the loins and from the hips downwards succeeded, and were slowly removed by frictions, baths, &c.

Some of these cases, where beriberi prevails, are with difficulty distinguished from that disease, and in a few examples, the two diseases are not only united in the same individual and run their course independant of each other, but the symptoms of one may be so modified by the other, that any line of distinction is impossible. Such examples are rare however. The following seems to be an instance.

Case 8. Shaik Madar, havildar, admitted 9th April with pains of all the joints and swelling of the right elbow, tongue furred, pulse 88, small, debility, and pricking sensations over the body; skin dry except when taking Dover's powder which afforded no relief. Gums were slightly affected by calomel, antimony and opium which aggravated spasmodic twitches of the limbs, particularly of the calves, which had come on at night, and occasionally extended to the body. Irregular fever succeeded, with sensation of internal heat. Bark and carbonate of iron did no

good. Symptoms were worse from 9 to 11 p. m. and about day light. In June pains returned from 4 to 6 a. m. and were nearly confined to the knees which were slightly contracted. Oleum nigrum did no good. He was injured by purgatives, and was much emaciated when sent on leave to his village.

The relation of these cases to “burning of the feet” will be noticed in a following page, but to the illustration of these complaints a very extensive experience would be necessary, in more favourable circumstances for the investigation, than often fall to the lot of an Indian practitioner. In native corps, dissections cannot be procured, and in the jails the practice is either very limited, or the circumstances of the patients too different from ordinary life, to admit of successful researches into the pathology of a disease, on which in its best understood forms, a late European authority states, that “dissection has as yet thrown no light.”*

I shall now make a few observations on the efficacy of particular modes of treatment, in addition to those scattered through the foregoing remarks, confining myself, nearly, to those about which difference of opinion exists and suggested by the cases before me or notes taken at the time, trusting little to general impressions and recollections. Many early and slight cases soon recover with rest and frictions and require nothing more, nor should medicines, especially active ones, be more employed with natives than is absolutely necessary. In all periods and in every form of the common Indian rheumatism, frictions are necessary and may perhaps be considered the principal means of cure; but European surgeons seldom employ them, in an

* Gregory, chapter on Rheumatism.

efficient manner, nor do the means at their command enable them to do so. A few minutes rubbing by the dresser or common sweeper is by no means sufficient, and men cannot be got from the ranks for purposes of this kind, unless in very particular circumstances. An addition to the hospital establishment of one or two regular rubbers, would be of the greatest importance to the credit of European medical officers, to the welfare of the men, and good of the service. The supply of liniments is also far too scanty, and the common camphor oil usually employed is of little efficacy, and what is worse, the men (both Europeans and natives) have no confidence in it, and will never use it more than they are obliged to do. Turpentine, ammonia, soap liniment or some of those preparations in use amongst the natives, as the dammer liniment should be issued freely to all native corps. Cajaput oil, an essential oil distilled from lemon grass, and other species of *Andropogon*, are highly stimulating, and have cured very obstinate pains, but they are probably too expensive for ordinary use.

The rheumatism of India is seldom what has of late been called the hot variety, and is almost in every instance benefited by warmth; it is therefore of great consequence to furnish the sepoys, who cannot be kept warmly clothed, with flannel rollers for the affected parts, which are also of great benefit in the puffy state of the joints and bursæ: and as the disease is kept up by the men lying with only a thin carpet between them and the floor of the hospital, cots or straw mattresses should be furnished to the sick, especially in the northern division.²

² At the time this was written, I was not aware that Government had, at the recommendation of the Medical Board, sanctioned the issue of cots to native hospitals,

Blisters are remedies of great value, but are seldom useful when the affection is acute, and when many joints are affected they seem hardly admissible. When any degree of fever was present, or the pain had made its attack suddenly, they seemed to favour the transfer of the pain to other joints, but in ordinary cases, especially when the knees, ancles, heels or smaller joints are painful or puffy, they are far more effectual than frictions and are often the only means by which a cure can be effected; and, fortunately, the natives, notwithstanding their strong prejudice to them in internal complaints, are very fond of them in the rheumatic affections to which they are most adapted. Pains in the loins and hips also readily yield to their use; and if other joints are afterwards affected, their repetition is equally or more advantageous than at first. Blisters and indeed all local remedies have been objected to of late by several writers, from some erroneous notion regarding the constitutional nature of the affection, and perhaps, because they had employed them in the acute stage of active rheumatism: but the practitioner in India is in no danger of being misled by reasoning of this kind, against the every day proofs of their usefulness. Not only do blisters exert a beneficial influence over the joint to which they are applied, but also seem to lessen the pains and the chance of affection of other joints. Much more depends on the counter-irritation they occasion than on the discharge, and a repetition of blisters is therefore to be preferred to keeping them open. No particular advantage has been observed from ointment of tartrate of antimony, or moxas. Mercurial plasters with a little tartrate of antimony rubbed on their surface, have

appeared to reduce puffy bursæ, and to ease the pain of the joint. Leeches are not only useful when the joint is hot and recently swollen, but in almost all stages when the pain is local, especially when it is fixed in the hands and condyles of the knees and elbows. They are to be frequently repeated in small numbers if they do good; and blisters will afterwards perfect the cure. When the pains occupy the whole of the long bones, the flesh of the thighs, legs, &c. they are less useful, but swelling of the periosteum of the tibia, clavicles and sternum when circumscribed, are often greatly benefited by their application. Fomentations are very beneficial in all forms of rheumatic pains, but particularly in those of the bones, or from mercury. A favourite remedy of the natives is marking nut (*Semecarpus anacardium*) applied to the joints, and is often of great service, but is violent and unmanageable, frequently exciting much inflammation and causing troublesome ulcers.

Warm baths where warmth can be secured to the patient afterwards, are generally grateful to the feelings, relieve pain and irritability and are of permanent benefit. If profuse sweating and weakness follow, they are to be omitted; for debility is especially to be avoided in this disease. Dover's powder is often a valuable auxiliary, when given along with the bath, and as directed by Cullen in his *materia medica*, in a large dose and repeated in smaller quantities at *short* intervals. If the abdominal secretions are unhealthy it is not to be employed alone. I regret to observe, that an eminent clinical lecturer in London congratulates the profession on the neglect into which Dover's powder and baths have fallen in the treatment of rheumatism; but I can state from extensive experience that in recent cases

when properly administered, they deserve our highest confidence. Many cases it is true will not be cured; old ones and those where the complaint is fixed in one spot, and painful nodes will derive but a little temporary relief; and if the powder is given in the usual way (8 or 10 grains three times a day) without reference to other circumstances, it merits the ill repute into which it has been endeavoured to cast it. Tincture of opium with antimonial powder is a good substitute, but the latter alone is very uncertain even in the largest doses. Laudanum to procure sleep and relieve the pains, will often require to be given in large doses, and by the ease it procures, saves the constitution from much of that destructive irritation which undermines the powers of life and aggravates the local symptoms. It seldom has any injurious effect not easily obviated. Guaiacum to be used with effect, must be given in large doses; a drachm of the gum three times a day has proved, in a number of instances, of great service. It has like most other remedies often failed; but I am not able to state the circumstances in which it is most useful. The decoction of the wood and the volatile tincture have also been advantageously employed, but they are not remedies of much power. Colchicum is supplied to the hospitals in acetous solution, and whether from the decay of virtue of the medicine, or the form of the disease, it has not been very beneficial. The oleum nigrum has been occasionally prescribed, principally where there was some suspicion of beriberi, but it did not appear to possess anti-rheumatic virtues. In some cases communicated to me, the cold affusion was employed and caused free sweating, but seldom relieved any of the symptoms. Sulphur has removed the pains and cutaneous symptoms together, but whe-

ther it did so by restoring the healthy state of the skin, or by its powers over the pains themselves for which it is a popular remedy in Europe, I cannot say ; but I have known it useful in common rheumatism where the skin was not diseased. There is a hot spring in the bed of the Godavery, 4 miles below Badrachellum, which has considerable reputation as a remedy in rheumatism. It abounds in sulphuretted hydrogen and has a temperature of 140. The well is a very powerful vapour bath, and the coincidence of its use with the recent investigation by Dr. Bardesley, of the powers of artificial baths of the same kind in rheumatism and affections of the skin, establishes the correctness of the popular opinion. It is in too inaccessible a spot ever to be of much general use.

But of all the remedies used in rheumatism, mercury is beyond comparison the best, and there are very few forms in which that disease is seen in India, in which it is not safe and generally effectual. The cases which have derived no benefit from it, were those affecting the calves of the legs, and attended with pricking, numbness, and other beriberi and neuralgic symptoms ; and where there were scrophulous ulcers or other signs of tainted constitution, and some examples of pains following sores and buboes which perhaps had something of a strumous character. In nocturnal pains of syphilitic origin it exerted its usual well known powers, and in numerous cases in which pains and swelling of the bones and joints could be clearly traced to mercurial action or to exposure when under its influence, the benefit was marked and sudden. In a few of these examples as well as others of common rheumatism, the patients appeared to be less subject to relapse than when relieved by other means,

but more generally, the liability to return was greater. Of these anomalies, the cases suggested the following explanation, viz. that when mercury had removed the diseased state of parts which other treatment had only mitigated, the cure was more permanent; but that by its action on the parts subject to rheumatism, they were rendered liable to take on new diseased actions, or to have the old ones, renewed; and also, that many old and bad cases beyond the powers of other remedies being benefited by this treatment, rendered the proportion of relapses greater. On the whole it is better to try what can be done by other means, but much time must not be lost, as the disease gets more inveterate by neglect. The bones, joints and tendons are more relieved than muscular parts. When the affection was at all active and attended with fever, touching the gums removed the pains; but if the fever is of an intermittent character bark or quinine must be exhibited at the same time, which are also very useful as general tonics in these and other cases, but do not exert, as far as I have observed, any direct power over the disease itself. When blisters relieve the pain of individual joints and general remedies have done good but the cure is imperfect, a sore mouth generally completes it in a few days; and in the most obstinate cases, which have resisted all other plans of treatment, it for the most part restores the patient to health. The cure is, however, not unfrequently imperfect, and frictions, baths and Dover's powder, and blisters to the site of any local pains which may continue after the other symptoms, are to be used as auxiliary measures; and the effect they now produce is remarkable, when compared with their failure before the mercury was

prescribed. When there are old pains without swelling, the effect is less decided. It is not in the active forms of rheumatism only, as stated in recent works, that mercury is useful, but also in the old atonic form in which we principally see it in this country. When the abdominal symptoms formerly described, with emaciation and depraved secretions supervene, it is a valuable and indeed the only very useful medicine. Although the pains of beriberi are not relieved by mercury, rheumatism following that disease is as much under its influence as other forms of the complaint.

The form in which it is administered is of considerable importance, and I have therefore made it a particular subject of enquiry. The mouth is easily affected, and as it is necessary to avoid more than very slight mercurial action, and to keep it up for several days, small doses are to be given. Three grains of calomel twice a day have been found too much, and in general one grain and a half two or three times a day is as much as can be given with advantage. It is advantageously combined with antimonial, or, what is better, with James' powder to the extent of three grains; this often opens the skin gently without irritating the intestines, which are liable to take on dysenteric action from more active medicines. For this reason the tartrate of antimony, although a more certain antimonial has been found inconvenient, by inducing purging. When given by itself, it has not caused sweating, when prescribed in less than one grain doses, and even when combined with opium it has not given relief till a grain of calomel was added: and although in this combination it did not often disorder the bowels, it is better to avoid the use of two irritating remedies at one time. When purging takes place from

the use of tartar emetic in this or any other form, it is immediately to be omitted, and an anodyne followed by castor oil administered, which at once removes every troublesome symptom. Blue pill is too uncertain; it does not assist the diaphoretic virtues of other remedies, and its long continued use is injurious to the stomach without benefiting the pains. The native practitioners use mercury to a great extent in rheumatism, and their imperfect combinations often cause violent salivation; but I have known men who were long treated by European surgeons with a great variety of medicines, cured by this means even when the ptyalism was so severe as to constitute a troublesome disease. These observations although bearing particularly on the treatment of natives, may be applied to that of Europeans to which they are equally applicable. Mercurial fumigations were strongly recommended some years ago by a Bombay medical officer on the ground of his own experience, derived from his having observed many sepoys discharged the service as incurable, recovering under the native treatment by fumigations with oxide of mercury, and the Bombay medical board recommended it to the service. I made a series of experiments with it, using the common mercurial ointment spread on a piece of an earthen pot, which was placed on a small vessel of charcoal between the patient's feet, who was covered, with the exception of the head, with blankets (cumblies) and the fumes allowed to continue in contact with his body for ten minutes. A cure was frequently effected by this means. A profuse sweat was generally caused and the mouth was often made sore, but the mercurial action sometimes could not be induced at all, in others ptyalism was sud-

den and profuse, and on the whole, I thought the plan unworthy of general employment. One fact was ascertained in opposition to the prevailing opinion of physiologists, viz. that the skin, when the cuticle is unbroken, is capable of absorbing; for the fumigation was performed in the open air and precautions taken to prevent the patient inhaling the fumes. The circumstance of the discharged sepoys recovering is explained, in part, by what is said above on the effect of leave of absence, and in others by the mercurial action and the modified vapour bath.³

³ The following observations on rheumatism were drawn up, at my request, by my friend surgeon J. Adam. The remarks apply principally to the disease as it occurs in the circars and although written from recollection and without having access to his journals, are evidently the fruit of close observation; I therefore consider the coincidence of his views with those which had previously been submitted to the Medical Board in this paper and with which he was not made acquainted, a very valuable confirmation of some opinions which are of considerable practical importance. Some of the cases were probably examples of the chronic form of berberi.

After remarking that few diseases are more frequent in their occurrence or more destructive to the constitution and that the pathology is ill understood, he proceeds to state the peculiarities which seem to distinguish rheumatism in India, from that form of the disorder described by authors. "I have generally observed this complaint to attack those subjects who had previously been suffering from other diseases, more especially as the sequelæ of fever, or whose constitutions had been impaired by former attacks of sickness. On a narrow scrutiny of the previous state of health nothing strikes one more forcibly, than the prevalence of symptoms indicating a deranged state of the digestive functions, before the patients complained of the local affection, which was afterwards the chief subject of complaint; and I have been led to believe that this condition may be looked upon not only as connected with the disease but as a predisposing cause. It is nevertheless true, that numerous cases occur in which no previous ailment had been noticed, and wherein there was no evident symptom of deranged health existing."

"The symptoms which characterize the disease are well marked and consist in pain of the several joints, more especially affecting the articulations of the elbow, knee, ancles and wrists. Generally speaking there is no external swelling and the other characteristic marks of inflammation, with the sole exception of pain, are wanting. There is no heat of skin, the pulse remains unaffected, the tongue is occasionally furred, the appetite usually defective, but sometimes good. There are, however cases in which febrile disturbance will take place, more especially towards evening, causing much restlessness during the night. As the complaint progresses the patient becomes weak and languid, the digestive organs suffer considerably, a general atrophy succeeds, with abatement of the pains of the several articulations; and should the lower extremities have been the seat of the complaint, a tottering of the gait approaching to a paralytic state is observed. The tongue becomes red and glassy, a diarrhœa the result of long protracted irritation supervenes, though this is by no means the invariable consequence, and nature exhausted sinks at last under continued suffering."

Burning of the feet.

The disease which has acquired the name of "Burning of the feet" has only come into notice since the Burmese war, and nothing has yet been

"The period when this disease prevails most is during the rainy and cold seasons, and it often occurs, from the genial influence of the succeeding hot weather, that an amelioration of the complaint is effected and there is every seeming prospect of recovery, when a change for the worse takes place on the first setting in of the rains. Many patients whom I have seen doing well during the hot weather have suddenly sunk on the approach of the monsoon, and so unaccountably, as only to be attributed to the shock produced on their tender frame by atmospherical vicissitudes common at that juncture. In enumerating the symptoms peculiar to this disease, I must not omit to mention the harsh, dry, and squalid state of the skin so prominent in the latter stages of the disease, as well as the total want of appetite, &c. and I am led, from a consideration of circumstances, to look upon an intimate sympathy subsisting between the alimentary organs and cutaneous system and a deranged or diseased condition of these, to be connected with the nature of the disease."

"When local symptoms evidence any degree of inflammation, the application of leeches followed by hot fomentations is the most appropriate remedy, and to prevent the disturbance to the general system or to regulate it should such have arisen, a purgative of calomel, colocynth and tartarized antimony given at night, and followed by aperient mixture is highly useful. When the bowels have been fully opened and the local inflammation controled, although pain still continues, it becomes necessary to apply some rubefacient remedy, for which purpose either blisters or tartarized antimony ointment may be had recourse to, and to determine towards the surface of the skin so as to keep up a gentle moisture, a diaphoretic mixture with doses of Dover's powder, was what I was in the habit of employing with great advantage; and where there prevailed great restlessness at night a full opiate occasionally was found highly beneficial, in allaying the general irritation and conducing to a recovery of health. When debility alone remained afterwards, nourishing diet with the use of wine or spirits and tonic remedies were recommended, as well as frictions to the limbs with linimentum saponis; and as much gentle exercise as the patient could take without fatigue, for on this principally did I rely with a view of preventing the succeeding atrophy, into which, from their own passiveness, they are so wont to fall. The warm bath I should deem very useful, but I have never employed it. When there were great languor and debility existing from the commencement, I generally employed blisters to remove the local pain, frictions with strong stimulating liniments, and the internal use of guaiacum, camphor and ammonia with bark decoction or sarsaparilla two or three times a day; regulating the stomach and bowels as well as the secretion of the liver by means of blue pill and gentle aperients of the warm kind exhibited occasionally. In one or two cases I had the happiness to see a recovery effected from a most deplorable state, by means of mild purgatives and the use of the blue pill until the system was impregnated, after a variety of other remedies had failed. Amongst the modes of cure recommended, I have tried the plan of mercurial fumigation extensively, and although I have witnessed beneficial effects to follow from its use, yet I cannot say that my experience would warrant a reliance on it excepting as an useful adjuvant. Of all remedies, however, there is none that ought to be more persisted in, after the local symptoms have been duly controled and nothing but debility or a tendency to marasmus remains, than *exercise*. *Change of air* to a warmer climate may be ultimately necessary previous to the expected monsoon, if the patient indicates no appearance of recovery from his weakness, as this disease chiefly prevails in those latitudes where atmospherical vicissitudes are most common, and

written expressly on the subject,⁴ nor has any opinion been advanced as to its nature, with the exception of the advertisement of the Board, in which it is stated to be a neuralgic affection occasionally a sequela of rheumatism. In some of the cases of disease of the lungs published by Dr. Conwell, this symptom was present, and the dissections he records throw some light on its causes, but rather on the circumstances of general disease of the body in which it occurs, than on the particular pathological state on which it directly depends. In his patients the whole system was diseased; no organ retained its natural functions in a healthy state, the structure of most was altered, and the patients were at once too ill for successful treatment, and for useful enquiry into the history of any particular affection, or the efficacy of remedies. The description both of the symptoms and treatment, is also too concise to be of much assistance. A comparison of these, however, with the disease as it occurred to the Eastward, and with the history of men who returned labouring under it in a milder form, and in whom its progress to recovery could be observed, may be of some use; and with other papers, by persons of more experience, may direct enquiry into the proper channel and save from gross and fatal blunders; which is all that can be expected in so

“where the rains set in at an early period of the year. What particular state is induced by the application of cold conjoined with moisture to the affected parts is difficult to determine, but I have thought that from the great pain generally complained of by the sufferers and the little appearance, frequently, of symptoms of inflammation, that it was more an affection of the local nerves than of the vessels. In fine, my opinion with respect to the nature of rheumatism in India as it occurs in natives is, that it is more an affection of the nervous system than inflammatory.”

⁴ There is a short paper on the subject, in the 2d volume of the transactions of the Medical and Physical Society of Calcutta by Mr. J. Grierson; and a few valuable observations will be found in Mr. Burnard's paper, on the medical topography of Arracan, page 44 of the third volume. At the time of drawing up the paper, I had no opportunity of referring to books and these remarks were unknown to me.

new a subject of enquiry. On no disease that the Board could have selected is information so much wanted; as I have no hesitation in stating, that an ignorance of the complaint has led to the sacrifice of many lives, and the entailing of great and permanent expence on government. In a disease like this, of which nothing was known, and which had no sensible signs by which it could be recognized; when the patient was not emaciated, as often happened in elderly men of a naturally corpulent habit and in slight cases amongst the young, he was suspected of malingering to avoid harassing duties or to procure leave to return to his own country; an opinion which would naturally lead to the greatest practical cruelty, in refusing rest in hospital, leave of absence and change of climate to men, to whom they afforded the only chance of recovery. Melancholy instances have come to my knowledge where men have died in making exertions above their strength, after having been looked on and treated as malingerers, and others where slow decay and uncontrollable disease have carried them off. This could not fail to lead to the loss of the confidence and respect of the men, amongst whom our practice in this country must lie; and even of the better informed European officers, however much they may be disposed to think, that the “doctor is not aware of the skulking going on,” and perhaps disposed to go further and to lead a young medical officer to look on his patients with a suspicion, which takes away all stimulus to exertion; and may induce him, if of a complying disposition, to refuse admission to cases of obscure disease such as that under consideration. My own impression on first meeting with this complaint, on which I possessed no

information, and from a dislike to admit men for whose disease I knew no remedy, was the same, but before I treated the disease as trivial or feigned, I fortunately met with it, in men of the best character and little likely to deceive, and without an object to do so. Nor is this impression removed through the service by the experience of the Burmese war, as I have had occasion within these few months to insist strongly, in conversation both with medical and other officers, on the necessity of the utmost caution in treating this complaint either as one of slight consequence, or in supposing that it was usually unreal. And here it may not be improper to repeat, that malingering is rare amongst the native troops, and when sepoys report sick with trivial complaints when there is much hard duty, they are generally men of broken constitutions, often from hardship on foreign service, or young weakly lads unequal to the constant recurrence of severe bodily exertion. It deserves also to be observed that corps subject to the same causes, have, in many instances, been sickly ever since and the men particularly liable to rheumatism and marasmus; and officers who do not consider this, are apt to ascribe the number of men unable to go through their duties, to disinclination, instead of to inability or indolence arising from indifferent health.

As far as my experience goes “burning of the feet” cannot be considered a sequela of common Indian rheumatism, and is very little if at all known at those stations where that complaint prevails most extensively. To the native practitioners north of the Kistnah it seems to be unknown. A case occurred in the jail of Masulipatam after bowel complaint, and was removed by Dover’s powder which caused free sweat-

ing. This weakened the patient so much that the medicine was necessarily omitted, and the burning in the feet returned. The gentleman to whom the case occurred,* justly observed, that the sensation was the effect of the skin being dry and the nervous influence imperfectly distributed. But in the following instance at the same place, it evidently arose from diminished power in the nerves.

Case 9th. A paria prisoner ætat. 24, admitted 1st January, came to hospital yesterday complaining of sense of numbness of his body and a burning of his feet, with costive bowels. Pulse at that time frequent and skin was slightly warm. Had half a drachm of compound powder of jalap which operated four times; says to day, that the numbness is better, but the burning of the feet, and he now adds of the abdomen, is no better; pulse 120, not very strong, skin is natural, tongue pretty clean; in walking moves steadily enough, except that he does not place his feet at once firmly on the ground, and he complains of pain in the calves of the legs. Has been ill 3 days. To take treeak farook pills and a diet of meat and wheat cakes. 2d. Pulse to day 112, skin natural; says he feels better of the heat in his feet and abdomen and that the numbness is quite gone, bowels twice opened. 3rd. Pulse 106, skin natural, one stool; says he has no complaint. 4th. Pulse 96, no heat or numbness. 7th. Pulse 84; no complaint. Omitt. med. 9th. Discharged.

This case was evidently allied to beriberi which was prevailing at the time, and of which burning in the feet is an occasional symptom. It does not, however, often occur in that disease, and is found to affect the

* Assistant surgeon G, Thomson.

soles and the calves of the legs, the back of each side of the spine and occasionally the flesh of the legs, in all of which a connection can be traced with other affections of the nerves of the part. The symptom is not confined to any class of cases, being observed in recent and slight examples, and in old and hopeless ones, but in which I have, in general, found the numbness not very great, and to be combined with other signs of slightly obstructed nervous power. Both, then, appear to depend on an affection of the nerves, and their occurring together would suggest that they are modifications of the same disease; which is further supported, by the fatal cases exhibiting many of the graver symptoms of beriberi. The evidence of an occasional correspondence in some of the symptoms and even of the appearances on dissection, are however by no means sufficient to identify two diseases, as these must often run into each other, if similar parts are affected. The general history of the complaints, therefore, affords the only satisfactory evidence; on which I am enabled to communicate the result of extensive observation, in the most favourable circumstances which have ever presented themselves. On the return of the troops from Ava in the middle of 1826, the corps that were sent to the northern division were in general suffering from “burning of the feet”, but no beriberi shewed itself till some months after, when the other complaint had almost entirely disappeared; and after this, and the disappearance of the sloughing ulcers and bowel complaints connected with depraved habit which prevailed with them, these regiments were very healthy, until the period of residence and season disposed them to the endemic of the circars. It was also observed, that men with burn-

ing of the feet were not peculiarly liable to beriberi, which attacked indiscriminately all new comers whether from Rangoon, or from places in India, although it was true that those men whose constitutions were impaired by this or other disease on foreign service, were rather more liable both to beriberi and fever. This observation was not confined to any particular corps, but was equally true of all those suffering from “burning of the feet” which entered the districts where beriberi prevailed, and also when stationed in towns where other troops were losing men from it. It was perhaps more instructively exhibited in the 4th extra regiment at Ellore than in any other. This corps was raised in January 1826, and was composed of recruits, and of men returned sick from Rangoon who were transferred to it. Amongst the latter, burning of the feet prevailed but did not attack any of the other men, and before beriberi made its appearance, which did not happen till the end of the year when the subjects of it had been exposed to the influence of the place for many months, the former disease had disappeared, except in a few obstinate cases, none of which ran into beriberi. The first instances of beriberi were not of a decided character. A man suffering from fever having lost the use of his limbs in September, and in October a sickly boy had œdema of the limbs and face with swelled belly, but without any affection of the nerves. These facts, observed as they were on the large scale in both diseases, afforded much better evidence of the pathological difference of these complaints, than can be derived from a similarity in the latter stages, with some resemblance in the appearances on dissection.

Having thus shown that the disease called “burning of the feet” is a different affection from any stage

of the common rheumatism of India and from beri-beri, and stated as the result of extensive observation on the eastern coast and the interior, that it does not *prevail* as a distinct disease in those parts of India,⁵ we are directed to enquire in what circumstances it has prevailed amongst the Madras troops. The only regiments in which the disease has done so, were those employed in Ava and in the straits of Malacca, and it did not occur frequently in these till they had been sometime in the country, and was most severe, when to the ordinary injurious influence of the climate and diet, fatigue and exposure were added. The disease did not disappear after a residence of some duration, as men who had been two years in Ava continued to labour under it. To the moist climate much may be ascribed; the air in all those countries being much loaded with moisture and the rains heavy, compared to those of the Carnatic. The variation of temperature is very slight at Malacca where the disease was very prevalent, but it is not confined to the districts near the coast, many being affected at Pegue, Prome and other places in the interior.

In all the places in which the disease prevails rations are issued to the troops, consisting of rice, two ounces of ghee (not always issued), a little salt fish and spices. Of the first and only part in which much nourishment can be supposed to be found, there was as much as a man could use, and I have seen much of the boiled rice thrown away. The deficiency in the food then consisted in the want of variety, of vegetables, of fresh animal food, of which almost all classes of Madras sepoy use a certain proportion, flour, milk, and various articles with which the natives

⁵ Mr. J. Bell informs me, that he has seen several patients at Tanjore who complained of burning sensations of the feet. Pain was felt in the situation of the last lumbar vertebra on rotating the spine, but not on pressure. Local applications to the spine removed the symptom.

vary their diet. It cannot be doubted that food of this description weakens the digestive organs, by its sameness and want of stimulating power, but also would gradually bring on a scorbutic state of the system, as I have known the scurvy to attack men better fed than the sepoy; and can state that rice, however abundant, will not preserve either Europeans or natives from that complaint, and that “burning of the feet” and sloughing ulcers will be aggravated and make their first attack in men on boardship, abundantly supplied with the same diet as is issued to them on shore. It is true, however, that men who had the means of getting better provisions, and who probably did furnish themselves with some addition to their rations, suffered; and on the whole, while we are fully justified in the conclusion that the change from a dry to a moist climate and long continued deficient nourishment, in circumstances otherwise unfavourable to health, predisposes to this disease, much remains to be done to assign to these their limits, and to point out the accessory causes to which the peculiar form of the complaint may be ascribed. If, however, we observe the success that has attended enquiries of the same kind in other diseases, we shall be little sanguine, in expecting soon to arrive at any thing like accurate knowledge on this—so lately noticed, and only to be observed in peculiar circumstances not likely often to occur.

“Burning of the feet,” which is the designation usually applied by Europeans, from the distressing sensation being for the most part confined to the soles, is merely a translation of the ordinary expression of a native soldier on presenting himself at the hospital, and has no pretensions to accuracy, but it deserves

to be retained, as marking the distinction and importance of the affection, till a more accurate knowledge is acquired of its nature. The burning frequently extends over the surface of the lower extremities which are affected with severe pains, in many instances confined to the fleshy parts, especially the soles of the feet and calves, as in other cases of affection of the nerves at their origin, and the limbs sooner or later emaciate. The hands have partaken of the morbid state, and in a few cases the burning has extended to the whole body and even to the face. The parts are dry and do not feel hot to the touch, but I made no observations with the thermometer; and on this subject, and the distribution of the morbid sensations, and their relations to other symptoms often present, no accurate observations have been made. In some cases the burning is stated to be worse at night, in which it partakes of the nature of those more common sensations which arise from slight nervous derangements common in dyspepsy, menstrual irregularity, and convalescence from severe disease. Nor is there any reason to doubt, that nervous irritability from deranged capillary circulation was occasionally a cause of the morbid sensation in Ava, as it unquestionably was of the analogous complaint in the prisoner, in whom it was removed by the diaphoretic action of Dover's powder, which, conjoined with tonics, Good states to be the proper remedy for sensations of this kind depending on irritable habit.⁶ Besides the

⁶ A gentleman of robust habit but subject to slight disorder of the bowels, was much distressed with painful scalding sensations in the soles and palms coming on in the evening and lasting most of the night. After some time, the parts became tender to the touch so that walking was painful, and the skin exhibited spots of a reddish tint which were slightly elevated. He was dyspeptic and the skin was usually dry. He derived temporary benefit from bathing the feet in hot water, and from blue pill and James's powder; but he owed his recovery to active exercise by which a free perspiration was excited.

pains in the lower extremities and emaciation, symptoms of a generally depraved habit were present; and in the worst cases extensive organic disease. The skin was dry and harsh, often scaly or covered with itch, the patient was harassed by irregular attacks of fever; he felt weak and was exhausted on slight exertion, to which he often had a great aversion. The tongue was usually pale, swollen, smooth or furred, and only red when the intestinal mucous membrane was excited. The gums were observed by several gentlemen to be swollen and soft, but the symptom was neither common or remarkable in degree. Night blindness was not of unfrequent occurrence as in some forms of scurvy. Cough was more common than in any other complaint to which the natives are liable, and there was distressing dyspnœa in the advanced cases. The pulse was little altered in the early stages, and, when uninfluenced by the organic affections, was small, irritable and easily excited by exertion or irritation of any kind. The digestion was in almost every instance impaired; the appetite was weak and irregular, and the most wholesome food caused uneasiness at stomach, puffy belly or pain. The abdomen was often tympanitic and tender to the touch; diarrhœas, dysentery, pain in the course of the colon or around the umbilicus frequently occurred, and increased the emaciation or destroyed the patient. In some instances, however, both the appetite, digestion, and evacuations were natural. In the worst cases stiffness and numbness of the lower extremities were complained of. Dropsical swellings of the legs were not uncommon and usually the result of debility alone, disappearing on the patient being enabled to keep in the recumbent posture, but

also in many instances the effect of organic changes, and complicated with effusion into the cavities. Although in most cases where “burning of the feet” was complained of, careful enquiry could detect signs of general disorder in the tongue, skin, or abdomen, a few had no other symptom and yet the disorder was real, and in time caused emaciation and bad health. In some all the general symptoms and even pain in the calves and soles of feet, numbness, &c. have been present without burning; and in others, the pains in the limbs have left the patient and yet the burning was unrelieved many months after the patient’s general health was restored, by his return to his own country. Nor is this surprising, when the different kinds of morbid sensations induced by even local disease of nerves are considered. Neither will the appearances on dissection throw any *certain* light on the cause of the sensation, the same morbid changes having taken place where this symptom was wanting as where it was present; but they point to the lower part of the spine as the seat of the local disorder, and are of the greatest use in leading us to a correct estimate of the formidable nature of symptoms, which end in extensive alterations in the structure of the viscera of all the cavities. It is of great importance however to observe, that these alterations are not essential to the disease, as a very large proportion of the patients if placed in favourable circumstances, may be restored to health in a moderate period of time. I shall select a few cases in which the symptom was present, from Dr. Conwell’s work, in which the account of the morbid appearances is very complete, although there is some difficulty in deriving information out of so

indiscriminate and lengthy a narrative of ordinary and extraordinary appearances.

Case 10th. Sunnassee, ætat. 22. Admitted 6th September, having been ill 9 months with burning sensation in the feet, which now extends to the knees; he is emaciated, restless, appetite and digestion imperfect, bowels regular, excited tongue, no abdominal pain on pressure. He did not improve at Wallajabad, and on the 1st December the burning sensation continued, with numbness, dyspepsia, irregular fever and diseased skin. In February and March he was more emaciated and complained of cough, debility and pains. Face was puffed. Died 28th March. Three pints of fluid were found in the right, and ten ounces in the left cavity of the chest. The upper part of the right lung a mass of tubercles, the lower hepatised, with scattered tubercles. Lungs and pleura costalis adherent.⁷ Heart small and pale. Abdomen contained thirty two ounces of fluid. Kidneys diminished. Irregular vascular spots at the lower extremity of the œsophagus, and a slight appearance of ulceration at the termination of the ilium. Some effusion at the base of the brain derived from the spinal theca. *Spine.* A little gelatinised serum is effused into the cellular substance posteriorly to the theca, the vessels of which are unusually small. Pia mater at the 10th dorsal vertebra on the left side is dark, and the cord at this place is soft. The equinal nerves of a dull bluish blanched appearance.

But this softening of the cord does not appear in any way connected with the symptom, as in the following case it was not present.

⁷ I do not notice the air and œdema, as they are mentioned in a way which leaves much doubt as to either having been present. Thus, weight of the lung is not enough to characterize œdema, nor if there had been much gas and 3 pints of water could the lung have remained uncollapsed. The cases are a valuable contribution to pathology, although in their present form of little general use. *Original note.*

Case 11th. 28th January 1826. Mahomed Issoph, subadar, ætat. 46, had been five months ill, his complaints coming on in the following order ; dysentery, swellings of legs and body, pain of limbs, burning sensation, dyspnœa, wasting and debility. Is now emaciated, feeble, and complains of dyspnœa, œdema, impaired appetite and digestion, sleeplessness, burning pains and partial paralysis of the lower extremities ; pulse 60, slight fur on the tongue. Dark spots on the skin. Pain on pressure over the colon, and the lungs are imperfectly traversed. In March there were abdominal swellings ; in June, griping about umbilicus, tongue red, was much purged, the stools of mucus, feces, and tinged with blood and he died on the 18th. *Dissection.* Some fluid in the cavities of the pleura and pericardium ; cartilaginous tubercles in the lungs. *Abdomen* contained 20 oz. of fluid with jelly like flakes. Peritoneum thickened and milky ; some ulceration of the mucous membrane of the ilium ; and the colon was thickened and much ulcerated. *Head.* There seems to have been no disease in the brain or its membranes. *Spine.* Much fluid without and in the theca ; considerable vascularity ; and the cordiform mass healthy.

The same appearances were observed in several other patients, in whom the disease was excited apparently by slight wounds, dysentery or other common disease. How far the effusion in the spinal canal is the cause of the burning and numbness, or the mere result of the general hydropic and cachectic disposition is somewhat doubtful. The former opinion is supported by the following case in which the upper extremities suffered, as well as the lower, and the effusion exterior to the theca extended as high as the first cervical vertebra.

Case 12th. Ramaswamy, sepoy, ætat. 25. Was three months ill, a sloughing ulcer having been successively followed by diarrhœa, dysentery, pains, heaviness of the body and limbs, stiffness, burning of the palms and soles, and numbness of the extremities. He is now emaciated and weak, his legs are œdematous and his appetite and digestion very bad. Has ten serous stools daily, urine scanty, pulse quick, soft and feeble; tongue pale and smooth, skin thick and dry, slight abdominal fluctuation; no pain on pressure. He died suddenly soon after. The lungs were found tuberculated. The liver large and pale; the mucous membrane of the intestines vascular, and that of the colon much ulcerated. There was water in the ventricles, and the cellular structure exterior to the theca was injected with gelatinised fluid from the first cervical vertebra to the sacrum; slight effusion only, into the theca. The cord appears to have been pretty natural, although the lower part was somewhat soft.

It must be observed that burning is by no means a certain consequence of the effusion, although its existence is indicated by other symptoms, and the constitution is in the same morbid state as in other examples. The following case is selected to show this, the connection with scorbutic habit, and the tendency to effusion and tubercular formations, and is in many points of view instructive.

Case 13th. Menthoo, who had suffered from dysentery at Prome was successively attacked with dyspnœa, thoracic pains, sore gums and teeth loosened, œdema, pustular eruptions especially of the extremities, pains, heaviness and numbness of limbs, emaciation, anorexia, indigestion, and watery stools. The transverse colon was tender and was felt enlarged; effusion took

place into the abdomen, the thoracic symptoms were aggravated and he died in four months after his return from Ava. *Dissection.* Adhesions of the costal and pulmonary pleura, and of the heart to the pericardium which was thickened and cartilaginous. Much fluid in the abdomen and the peritoneum was thickened, red, and studded in all its convolutions with minute, firm, white tubercles containing a fluid. Liver rounded and irregular anteriorly. *Head.* There was much effusion between the arachnoid and dura and pia maters but very little in the ventricles: the cerebral substance was soft. *Spine.* Much fluid external to the theca and between it and the cord. Cervical and lumbar portions of the cord soft. The cauda equina surrounded by a substance like current jelly and appears blanched.

There can be no doubt of the *general* effect of these effusions in the spine, but in a sepoy who complained only of some abdominal pain and cough, and emaciation with quick pulse and vomiting towards the termination, but no burning or numbness, nearly the same appearances in the spine presented themselves on dissection. The lungs and mesentery were tubercular, adhesions had formed between all the abdominal viscera, and the newly formed false membrane of which they were composed had acquired a tubercular structure; and the mucous membranes were ulcerated and that of the colon had sloughed. In other instances, severe pain in the lower extremities was the only effect of these effusions, observed during life.

The pathological inferences to which these cases lead are of great importance, and demonstrate that the disease is not confined to one part of the body, but appears to be connected with a general depravation of the system and morbid state of the fluids; and that

in the progress of these, the functions and structure of the spinal cord and nerves are more or less altered and diseased. The tendency to tubercular formation is in part explained, by the frequency of consumptive complaints in the moist climate of the Straits, and the curious observations of Mr. Baron on the effects of coarse and unnutritious food, in inducing tubercles in the membranes of the animals on which his experiments were made. To say more in the present state of our knowledge would be useless, but as the relations of this complaint to other diseases are so obscure, no fact should be overlooked; and it may therefore be stated, that men labouring under “burning of the feet” appear to have been very subject to sloughing ulcers, of which a melancholy instance occurred to me, in a man who applied marking nut to his foot to remove the former complaint, and died in consequence of the ulcer caused by it becoming immediately phagedenic, and destroying the foot in a few days. The diseases prevail in similar circumstances, and it is therefore impossible to say how far the one gave rise to the other or were merely accidentally conjoined ⁸ These dissections also afford a very important practical lesson, which should be carefully

⁸ This observation must not be lost sight of in the treatment, and impresses the necessity of great caution in applying blisters to parts the nervous or vascular powers of which are much diminished. A gentleman who unexpectedly recovered from a most aggravated attack of remittent fever, during which there were unequivocal symptoms of effusion in the spinal canal without cerebral disturbance, nearly lost the use of his legs and arms, and suffered the most excruciating spasmodic pains in the calves of the legs and soles, with burning sensations of the surface of the feet; these were increased in the night. Sinapisms were applied to the feet and, having been allowed to remain too long, vesicated. The serum was discoloured and livid, much of the skin sloughed and he narrowly escaped general mortification of the legs. When the sloughs were removed with the scissors, granulation went on rapidly under the use of hot dressings. Mr. Burnard remarks “that the circulation appears languid in the extremities, and in one instance was so little capable of supporting any increased action, that blisters applied to the calves of the legs to relieve it, produced sores, which went into rapid suppuration.”

attended to, not only by medical officers, but by military authorities who may be connected with future expeditions to the eastward; viz. that the disease of “burning of the feet,” and those other affections of an allied character depending on similar causes, although devoid of this symptom, are exceedingly prone to run into irremediable and fatal organic lesions, for the cure of which no medical skill nor the advantages of a return to their native country will be of any avail. It is in vain to recommend the supply of other food, which, in extensive expeditions, cannot be done by any government however liberal. But by allowing of the return of all men afflicted with this malady at an early period of the disease, not only would the real efficiency of corps be preserved in a better state than when burdened with a heavy and hopeless sick list, and the expenditure of passage money more than saved in pensions; but what is of far more importance, the moral effect on the minds of the native troops, which must be produced by the miserable deaths of so vast a part of those employed, would be prevented, and a conviction of the care of the government for their welfare more fully impressed on them. The prognosis is not unfavourable if the visceral affections are slight, the bowels not much disordered, and the emaciation has not proceeded far, and a change of food and climate can be procured: but even then, the cure is likely to take many weeks and months before it is complete, and there is cause to fear that the patient will fall an easy victim to other disease. In other circumstances there is little hope of permanent recovery; I am not, however, able to point out with accuracy the degrees of danger of the various organic changes. None however are so fatal as bowel com-

plaints, which in all circumstances are more frequently mortal in natives than in Europeans, and especially in this disease in which the evils of scurvy and a tubercular disposition are combined.

Of the treatment little can be said. Antiscorbutics have been recommended, and in favorable circumstances may be useful. The treatment by ipecacuan, nitre and small doses of calomel pursued by Dr. Conwell, seemed to do little good. The essential object is change of climate and a return to the usual habits of life and food of the sepoy, with exemption from duty, especially hard drills. This is perhaps best attained by allowing him to return to his village, and if with the regiment, not sending him to duty for a considerable time after his apparent recovery. As the patient gains flesh and strength, the pains and burning leave him, and he recovers without the aid of medicine. Mercury is not beneficial, even in the pains of the legs when the burning is slight or absent.

Case 14th. Paupodoo, ætat. 30, has severe pains in the lower limbs, especially the calves of the legs, which have resisted various treatment. He had irregular fever, headach, his skin was covered with itch, his tongue was parched, he had no appetite and was much emaciated. Mercury was given in small doses but had not the slightest effect in removing the symptoms, which gradually declined and his flesh and strength were restored, after which the pains left him.

Case 15th. Shaik Modinah, ætat. 30. Has weakness, burning in the soles of the feet and pains of the legs, bowels and appetite regular; blisters were applied to the feet without benefit, and calomel and antimony were used with no better success. When left to himself, his strength improved and in a month the pains

had nearly left him, and he recovered.

Case 16th. Mahomed Gollib. Burning in soles of feet with pains of the lower extremities, emaciation, dry skin, irregular fever, cough with copious expectoration and dyspnœa on exertion. Treated with mercury which did no good, and may be supposed therefore to have done harm. He was sent to his village for the benefit of his health.

Case 17th. Shaik Mucktoom was admitted with general debility and pains in the legs and soles of the feet; nausea was relieved by an emetic which brought off bile, and he recovered when using bark; but rest and good food seemed the principal means of cure.

Case 18th. Guntaloo, admitted with pains, and a burning sensation in the soles of the feet and “weakness all over the body;” was relieved as he gained strength by rest and bark.

Elderly men are most subject to the complaint and in them the disease is most obstinate, of which the following is a common example. Permaloo, ætat. 54, has had burning in the soles of the feet with pains of limbs, distension at epigastrium and cough for months, and is pensioned as incurable.

There are usually signs of great local debility. Naikloo, ætat. 40, has pains in limbs, burning of soles, œdema of the legs, and feelings of weakness all over him. The œdema subsided rapidly by rest alone, and the burning soon left him when using bark. The restoration of strength and the healthy state of the digestive organs are the indications to be had in view, and for this purpose the mildest laxatives only should be used, such as castor oil, rhubarb and magnesia, &c. Sulphuric acid and ginger have appeared to be useful additions to the bark. If there is local pain a few leeches are

to be applied instead of blisters, which are hurtful in constitutions so irritable as those affected with this complaint. The oleum nigrum of Dr. Herklots has been used in a few cases without success, for the pains in the soles of the feet. It deserves a further trial. Of particular remedies of which my experience affords but doubtful evidence it is better not to speak. The various medicines required to obviate the many ails arising in chronic diseases, must be left to the common principles of medical science, except when the good or ill effect of particular drugs have been evident in extended experience.

The complications were often very troublesome and threw the symptom we are considering into the back ground, as in the following case. A man, ætat. 30, had a foul ulcer at the bend of the arm ascribed to a slight wound ; it inflamed and the ulcer became foul, he then got irregular fever, tumid spleen with pain in the left hypochondrium and shoulder ; after a fit of fever a burning sensation over the body came on (unconnected with fever), and accompanied with severe pains and disordered stomach, from which he did not recover for some time. Another who seemed to labour under the same morbid influence, was admitted with great debility, nearly complete loss of voice and pain extending down the gullet to the stomach on swallowing. To the investigation of these and many cases of the same character, great opportunities and zeal would be required.

I have not seen any case of disease in Europeans which I believe to be of the same nature as that we have been considering ; although a burning of the surface has been a symptom of disease of the brain, or other part of the nervous system. Of the first, an exam-

ple occurred in J. Allan, an artillery man who was severely injured by the explosion of a tumbril. He continued for years to suffer from headach, and I had occasion to treat him several times for violent pain of the left ankle with wasting of the limb. On the 27th May 1829 he was readmitted with great increase of headach, and numbness of the limbs accompanied with sensation of burning, although they were cool to the touch. Leeches and purgatives gave him no relief, headach was attended with soreness of the scalp over the occiput, and was equally painful day and night. His tongue was dry and white and the stomach was irritable. The whole body was affected with the burning sensation, and he was not relieved by bleeding, which was performed at his own request. He then suffered from giddiness and had occasional epileptic fits. He improved a little under gentle laxatives and occasional leeching and cold to the head, and was ultimately pensioned.

The following case occurred at Hyderabad where I believe beriberi is hardly known, but the symptoms were similar in some respects. A sergeant, in India 10 years, had been ill for five weeks after exposure to cold when he had committed excess: the lower extremities swelled and became painful and weak immediately after, with high colored and scanty urine; he had cough and thick ropy expectoration and increased action and uneasiness about the præcordia. The œdema receded, and the lower limbs became almost paralytic with numbness and a most distressing burning sensation nearly to the hips. When I saw him this had diminished, and with the numbness, was confined to the inner side of the legs and to the soles of the feet. The flesh of the calves were tender to

the touch, and he complained of pricking sensations of the knees and “creeping” of the legs: there was much pain and stiffness of the soles of the feet, which were exceedingly tender to the touch and the burning heat had not quite left them; the skin was soft and on the slightest motion of the legs, which were much emaciated, they were bathed in perspiration but without feeling cold to the touch. Tongue furred, appetite unusually great, pulse 100, small, rather sharp and weak; urine now copious and of natural color. Had never lived hard,* had venereal or head symptoms, and had been always healthy. No pain or tenderness of the spine. Had at the commencement a little numbness and pain at the extremities of the fingers. Warm bathing of the feet has relieved the pain and stiffness. He derived much benefit from the diligent use of frictions with turpentine, and especially from sinapisms to the inside of the legs and soles of the feet, which rapidly removed the numbness and burning sensations and increased the powers of the limb. Blisters to the lumbar vertebræ and oleum nigrum were used at the same time, and seemed to do good. His recovery in two months was almost complete.

A case in some respects analogous is recorded in the *London Medical and Surgical Journal*, April 28th 1832, under the head of chronic sciatic neuralgia. A gentleman after exposure to cold, had pains of the joints, neuralgia of the sciatic nerves and spasms of the legs and thighs. Pains were aggravated from 4 P. M. to 4 A. M. and were compared to severe scalding. He was much emaciated. Iron, arsenic, quinine and an open blister failed. The cure was effected by issues, but

* It is probable that he had drank a good deal. *Original note.*

erratic neuralgic pains continued for some time.

Rheumatism in Europeans.

The subject of rheumatism as it affects Europeans in India is of the greatest practical importance, and has been entirely neglected, as far as I know, by almost every writer on intertropical disease ; probably from a belief that the climate has little influence in modifying its character or treatment. Notwithstanding its general and frequent prevalence over the globe, it has by no means been studied with such success as to render it unnecessary to investigate its history further, and especially, the varieties it exhibits in different climates. At present I shall confine my observations to a few points of considerable interest, the opportunity for laying which before the Indian medical service is my chief inducement to write this paper. Should these meet with the approbation of the Board, I shall have much pleasure in adding the result of my experience in such other points, as may be thought to stand in want of further illustration than is to be found in books.

The common acute rheumatism of Europe is very little known in India, and when cases in some degree resembling it do occur, they are attended with little hardness of pulse, and the skin instead of being bathed in perspiration is usually dry, although instances of the contrary do now and then occur. The joints are then hot and painful, but I have hardly met a case where heat was not agreeable to the patient. Repeated leeching where the pain is not much diffused is of signal advantage. General bleeding has very seldom done good, and the blood is rarely buffy except when the external complaint is complicated with thoracic

affections. Warm baths and Dover's powder have been less useful in this form of the complaint than in any other, even when they caused free and general perspiration. Tartrate of antimony in large and frequently repeated doses has been often of great use, and should be more generally employed in this form of the complaint than I believe it has yet been; one grain or a grain and a half may be given every hour with advantage, and will be found to remove rapidly a complaint, to which other remedies are not adapted or cannot be safely used. Its effects do not depend on its diaphoretic or evacuant virtues, as when none of these have followed its exhibition, the benefit from its general constitutional action has been great. A caution however is necessary against continuing the medicine too long, as it causes considerable debility, and therefore, when the symptoms are relieved it should be omitted, and bark with good diet and a moderate allowance of spirits at dinner prescribed, by which the appetite and strength are rapidly restored. Instances have occurred where the internal use of tartar emetic has been greatly assisted by the constitutional effect of camphorated mercurial ointment, but the combination of calomel and the tartrate is apt to irritate the bowels. Blisters are not to be used till the excitement has been removed, as they irritate and excite fever, and do not often relieve the pain. Imperfect cures have been completed by their means. The acetate of colchicum has been useful in this form of the disease, and also in rheumatism of an opposite character but coming on suddenly; nor have I found its beneficial effects confined to cases of affection of the joints and bursæ as mentioned in some recent papers. The wine has failed, principally I believe, from its having been obtained at

considerable expence and therefore prescribed to the most obstinate cases only; it is a form better adapted for this country and would, I have no doubt, lead to more successful practice were it supplied from the government stores.* In rheumatic gout in India, it is as powerful a remedy as at home. Caution in its use is necessary, as I am informed by an experienced surgeon on this establishment, that he lost a patient from abdominal inflammation brought on by its use in doses of the usual strength.

The consideration of the varieties of chronic active and passive rheumatism I shall not at present enter upon, but proceed to state the result of my experience on several points which are still undecided by authors, or on which I have found the opinion of practitioners in this country to differ.

It has been stated of late that rheumatism is never a local complaint, and Mr. Lawrence is of opinion that local remedies are of no use; but in India as in Europe examples constantly occur, in which it can be traced directly to a cause acting on a part of the surface, which alone takes on diseased action, and this will frequently exist for a long time with great severity without attacking other parts; and not uncommonly, the whole limb is slowly wasted by the continued pain and inaction before any other parts suffer. In such examples as well as many others, whatever effect mercury and other remedies may have on the local disease, the cure is most certainly and quickly brought about by local means, and they are very important auxiliaries in every case where the pains are at all fixed.⁹ The tendency to affect other parts is not, in ge-

* The wine of colchicum is now supplied from the stores.

⁹ A few drops of croton oil rubbed on the part, is a useful and economical counter-irritant.

neral, an evidence of constitutional taint, but is merely the result of the easy transference of the diseased action to other structures of the same kind; although in long continued disease the whole habit partakes in it, as is evident by various new parts suddenly and without ostensible external cause, after long intervals of apparent health, taking on the old disease in its original form.

Cold is a very general cause and affects especially those of weakly constitutions, convalescents from other diseases, and men in confinement; the disease also prevails most severely in districts where the variations of temperature are great, especially when these are accompanied with much moisture. Numerous cases however occur in the height of the hot weather, which cannot be traced to any cause, and are often exceedingly obstinate. In feverish districts rheumatism is very prevalent, partly from the moisture and variable climate being exciting causes of both diseases, and partly from the frequent origin of rheumatism in long continued attacks of intermittent and remittent fever. An interesting example of this has already been related, in which even swellings of the periosteum arose from neglected ague, and multitudes of others have been carefully observed. It is true, that in individual cases it is difficult to prove that the affection does not arise from venereal disease, but when the effect is of frequent occurrence, immediately follows the supposed cause, is aggravated by its recurrence, and when in many instances the assertions of the men that they had not laboured under syphilis are corroborated by the hospital records, and when they have no motive to conceal their having had disease and describe with accuracy syphilitic symptoms under

which they had laboured years before, I do not think that vague surmise of previous taint can be received as an explanation deserving of much regard. To this I would add, that the comparison of venereal sequelæ in the same body of men, in districts where fever is little known and when treated on the same plan, has fully borne out the opinion, that all forms of rheumatism, and pains in the bones and periosteum, are often induced by fever treated with or without mercury; and I may add, that nodes of the long bones may arise without any syphilitic or mercurial action, and as a simple consequence of rheumatism. Few parts suffer more from rheumatism after fever than the scalp; and the intermittent hemicrania is, in many instances, a form of febrile paroxysm coming on with obscure chills and going off with sweats; and at others a sequela of the fever, but partaking of the character of the idiopathic disease of the scalp, which, though intermittent, is often unconnected with fever and not to be cured by the same means. In both forms of the complaint the periosteum is occasionally inflamed and swollen; and the treatment requires to be carefully varied, till a successful combination of measures is discovered. The diffusion of the pain over the scalp or down the neck takes place in each form of the disease, and when that is most distinctly of a febrile character if it continues long or relapses are frequent, all the joints and the trunk suffer; and in one instance the heart became inflamed and required active treatment, principally by local bleeding and mercury. The internal ear is frequently involved in both these complaints, and morbid sounds, pain and even discharge follow fever and occur in simple rheumatism, and are often obstinate. It is difficult to distinguish some of these complaints

from cerebral affection, and they have in my experience been the precursors of very alarming disease.¹⁰

The intermittent pains of the side of the head are also sometimes of a neuralgic nature, when they prove very obstinate and require the greatest perseverance on the part of the surgeon. They are generally attended with abdominal or uterine disorder, and to these the attention must be directed. The pain often shoots along the jaws and sometimes the teeth ache dreadfully, and if they are diseased the diagnosis is increased in difficulty, as similar symptoms arise from diseased teeth which had been attended with no inconvenience for years. I have seen the whole teeth of one side of the head or of half the lower jaw loosened by the nervous affection, although unconnected with organic disease or any constitutional taint.¹¹ These cases as well as all others of intermittent headach, are remarkably benefited by change of air, and a return to Europe and residence for sometime there. In other examples no hope of cure can be entertained, but when there are no general symptoms of disease of the brain, I do not know that we can ever determine that these affections are incurable. In the following remarkable case there was no room to doubt; but when we consider how many of the European soldiers are subject to obstinate pain in the head, consequent on fever, mer-

¹⁰ In one, after fever discharge from the ear took place, and caries of the os petrosum and suppuration of the cerebellum terminated a very painful illness. In another the singing in the ears was attended with pains of the scalp and general ill health and wasting; afterwards serous effusion appeared to have taken place on the brain, indicated by inability to *direct* the motions; partial palsy; loss of power to articulate *certain* letters; forgetfulness of certain letters and of common words in writing ordinary sentences, and loss of the power of writing distinctly; enlarged pupil and rapid pulse. Bleeding did harm. He was cured by mercury and blisters. *Original note.*

¹¹ Œdema of the eyelid and other parts may be induced by the pain; and in one case not only was the temperature increased, but a number of small boils was the result of the excited state of the vessels.

cury, excesses and exposure, it is reasonable to suppose that many of them are dependant on minor degrees of organic change.

Case 19th. An invalid artillery man had been long subject to headach. I found him complaining of severe pain in the left side of the head which was most violent after 1 p. m. and during the night, and easiest in the mornings and forenoon; severe pain of the left upper jaw bone and in the teeth of the same side none of which were carious, but the gums were retracted and spongy. He had also occasional epileptic fits and the power of the lower extremities was diminished. The fits became more frequent. The intellect was not sensibly impaired till two days before death when he was insensible, the eyes fixed, pupils contracted but affected by light; pulse frequent, small and feeble; breathing difficult. Died convulsed. The vessels of the pia mater were gorged with blood. The substance of the cerebrum was harder than natural, and the induration extended down the medulla oblongata and to the forepart of the spinal cord. When it was attempted to separate the dura mater from the anterior lobes of the cerebrum, the substance of the brain was torn away with it, and all the parts immediately above the orbits were broken down and had the appearance of an abscess. The membranes were much thickened; the whole hollow space between the left petrous bone and optic foramen was full of round cartilaginous tubercles, some of them as large as a walnut, attached to the singularly thickened membranes. They extended upwards to the transverse spinous process of the os sphenoides, and had caused the partial absorption of the bone leaving a sharp spicula. There was fluid in the ventricles and at the base of the skull. The cerebellum was healthy.

Another very frequent cause of rheumatism is the use of mercury, which deserves the utmost attention, not only from its vast importance in reference to the judicious use of that most valuable remedy, but also from its bearing on many questions of practical importance in all countries. It has been asserted by a large body of the profession, that nodes do not arise from venereal disease, if mercury has not been given for its cure, but I have found this and all other forms of secondary symptoms to follow that disease when carefully treated (as I am in the habit of doing in the vast majority of cases), without the use of a grain of mercurial medicine; but these are far from common, and do not often prove obstinate if a mild mercurial course is had recourse to. On the other hand, I can state from extensive experience carefully recorded, that pains in the limbs, periostitis, and nodes do arise in India very frequently from mercurial action for whatever cause induced, and however carefully, and in whatever form it may be administered. Mr. Lawrence in his valuable lectures on surgery denies that the periosteum is ever diseased by mercury, because it is the best remedy; which cannot be admitted as a proof so long as we are ignorant both of the manner in which the disease is induced and cured, and consequently unable to reason on the subject; and to me it appears that the proof of its activity in disease of the part, affords a probability of its having also a power of bringing on morbid action when the part is in health. Dr. Alison whose philosophic caution is equal to that of any living writer I am acquainted with, admits, that with cold mercury may produce periostitis, but I am every day in the way of seeing it induce severe pains of the bones when the weather is equa-

ble and hot, and the patient is carefully cased in flannel and protected from the possibility of catching cold. He also thinks mercury an unsafe remedy in inflammation of the periosteum induced by it, a supposition certainly probable enough in theory, but which careful observation has convinced me to be an ill founded rule in practice, although important to be kept in view as a caution in the method of its employment. Dr. Alison is also of opinion that mercury never produces symptoms like syphilis, and reasons from “the ascertained fact” that in tropical climates such never result. On this subject I have reason to entertain opinions somewhat different, as I have observed various cutaneous affections arise from its use, especially an eruption of inflamed pustules over the body and face; and in one man, who there was reason to believe, had not had any venereal complaint for twelve years, repeated courses of mercury for hepatic affections and fever, and subsequent exposure on a march in the wet season, caused severe nocturnal pains, tumefaction of the tibia, an eruption of round dark coloured scaly blotches over the body and very slow ulceration of the throat, of which he died. Dr. Musgrave, whose authority appears to be recognised by the principal medical journals as conclusive, declares he never saw pains such as we are considering in the course of a practice in the West Indies, in which he appears to have abused it beyond measure. Whether there is any way of explaining this I know not, but I have already stated, that pains are thus produced in natives, and I have had more extensive opportunity of noticing it in Europeans. Notwithstanding the high opinion I entertain of mercury as a remedy in most intertropical diseases, I employ it with great caution, never persevering in its use when its

effects are not easily induced, or when it does not soon do good, nor are many men severely salivated under my care; yet so common and so immediate is the effect on the limbs in many instances, that mercurial pains are ever a subject of dread and often of expectation, being an evil to which we must submit in preference of greater ills. In proof that these pains are really the effect of the use of mercury, in addition to the remarks made above on the nature of the evidence of rheumatism being caused by fever, it may be observed, that these pains follow *immediately* the mercurial action, at a time when rheumatism from other causes is almost unknown. The nature of the disease for which it is administered does not seem to make much difference in the frequency and severity of the pains, as they follow hepatitis, dysentery, and simple membranous inflammation when treated by mercury. Whether they more commonly occur after venereal diseases, I cannot say, not being in the practice of using it unless in obstinate or old cases. There is no form of rheumatic inflammation and pains that is not caused by mercury, but the lower extremities suffer most frequently, especially the thigh bones and legs. Sometimes the pains are of a neuralgic character affecting the fleshy parts below the loins, which are occasionally tender to pressure, and they gradually leave the patient from above downwards. When the treatment of severe disease is conducted, however cautiously, by large doses of calomel, the patient rarely escapes more or less subsequent suffering from pains. But it is especially in those examples of frequent occurrence, in which salivation does not follow the exhibition of mercury, that pains follow, even when not persevered in to any great extent. This is one reason amongst others which makes it im-

perative to stop the medicine, whenever it is evident that it will not affect the system, or fails to do good. An opinion still prevails with many, that the mercury is not absorbed in such cases, which is exceedingly injurious in encouraging its continued employment long after it must have acted as a poison, under an idea that its specific virtue is the only thing that can overcome the disease. That this opinion is erroneous I have had abundant proof, not only in the subsequent pains, the occurrence of profuse ptyalism days after the omission of mercury on the disease yielding to other means, and in the paroxysm of an intermittent fever and even the irritation from a blister, stopping the mercurial action while they lasted ; but also in the following observation made some years ago, and confirmed by a great number of subsequent observations. *After a moderate quantity of calomel is taken the gums are slightly affected and the mouth runs a little, but while the medicine is continued it gets drier and less sore, and perseverance in its use never fails to be injurious and its ordinary effect on the mouth or on the disease cannot be produced.* This observation I have found of great use in practice, not only in avoiding the production of pains, but in preserving the lives of patients who would otherwise sink from the combined influence of visceral disease and mercurial irritation.¹² The joints do not always escape the pains arising from mercury ; but in two cases which occurred to me lately, inflammation and increased secretion into the cavity of the joint itself, appeared to have had some connection with hepatic and intestinal disease ; the affection, however, is not very common, and extensive experience would be necessary to ascer-

¹² The observation in the text does not supersede the necessity of careful attention to the appearance of the gums and the character of the ptyalism, caused by mercury when it does not act beneficially.

tain how far this was an effect of the drug taken for the disease of the internal parts.

A stout European suffered from several violent inflammations of the liver, particularly of the left lobe. He was several times successfully treated, but his health was at last broken and he had pains in the knees, &c. In April 1831 I lost sight of him, and met him again in 1832. In the interval he had got worse, the left lobe could be felt hard and enlarged, he had a nearly constant purging of whitish stools mixed with puriform matter, and occasionally alternating with reddish feculent evacuations. He suffered from pains, especially of the knees, which were swollen on each side of the tendon of the rectus, and it was remarked, that the internal pains and bowel complaint and pain of the knees in some degree alternated. The left colon was felt thick and the whole of that gut was tender. He was anasarcaous, the belly tumid, and his breathing obstructed in the recumbent posture, and he gradually sunk and died convulsed; he could swallow and his face remained sensible to the last. The brain was healthy. Bloody serum was found external to the theca *anteriorly*. The tongue which was red and smooth during life was now pale. The mucous membrane of the great end of the stomach was red and pulpy, as were the whole of the small intestines, with the exception of spots here and there near the colon. There were some superficial ulcers of the right colon and some marks of others having healed, and the whole gut was irregularly gorged; the sigmoid flexure greatly thickened, its external coats seem cartilaginous, and ulcers were more frequent. The liver was very smooth, enlarged and shapeless, the white matter unusually developed and the edge of the left lobe so much so as to

appear devoid of glandular substance, and the whole liver had a fleshy look and tore like rotten leather. The gall bladder contained only a little pale watery bile. The white secretion passed in such large quantity, appeared to have come from the small intestines and to have passed rapidly and little changed through the colon. The kidneys were vascular, and the urine had deposited a thick white sediment, was of low specific gravity (1012.), and afforded some coagulum with muriate of mercury. There was much swelling of the knee joint on each side of the patella, arising from the distension of the capsule which extended two inches above the knee pan. The bursæ seemed healthy.

The pains in the other case followed on the 8th day of a bowel complaint, at first apparently mild but connected with disordered and deficient biliary secretion, for which he had taken small doses of calomel and ipecacuan, without affecting his mouth except on one side: the pains were at first very violent but after some time declined, and puffy swelling on each side of the tendon of the rectus muscles, and of the bursæ of the ankle joints took place, proved exceedingly obstinate, and reduced the patient to a state of great emaciation from which he is not yet recovered. The mercurial action did not appear to be the sole cause of the pains, and the secretions showed the disease to approach in its nature to the preceding case.¹³ At one time the pain was most severe in the muscles of the right thigh, and it deserves notice, that in some cases of hepatic disease there is pain in the right knee and thigh or in the groin, and even in the foot. Heberden also describes a case of inflammation of the spleen, which was attended

¹³ The patient was transferred to the cantonment hospital at Secunderabad, and sunk under a relapse of the bowel complaint.

with severe pain in the calf.¹⁴

Notwithstanding my conviction of the frequency of mercurial rheumatism I can assert on the ground of extensive experience, that mercury in small doses and judicious combination, is the most generally effectual remedy in all forms of rheumatism in Europeans in India; and the remarks on its employment in natives apply without any material modification to Europeans. It is especially necessary to give it in small doses, for very little will affect the mouth, and as there is danger of relapse being caused by the peculiar effect of mercury, it should never be given more frequently or continued longer than is absolutely necessary. This caution is the more necessary, as it is stated in some recent works, that mercury affects the system with difficulty in acute rheumatism; and in other cases, ten grains of calomel every night or five grains two or three times a day are recommended, which is far more than I consider safe. Mr. Wyllie, formerly cantonment surgeon at Nagpore, who was averse to the free employment of calomel in other diseases, assured me, that it was the only agent which had any power over the severe rheumatism of that place. The manner of its action is, I believe, little understood, I shall therefore communicate the following case which throws some light on one part of the subject.

¹⁴ Sense of uneasiness and distressing aching pains of the thighs are of frequent occurrence in chronic dysentery, and are of the same nature as those which are so often complained of in the hips. They are of a neuralgic character, and apparently arise from the nerves near the diseased intestine partaking more or less in the morbid actions. When the colon on one side is diseased and the rest of the gut is little affected, the pains are confined to the limb of the same side. The thigh has been observed to be stiff and to be extended with some difficulty, and the surface may be benumbed. The pain, in aggravated cases, has been described as peculiarly severe at the inner side of the knee joint, and its motions are not performed freely. The nerves running along the inner side of the limb have been most affected, causing tenderness down the inner side of the thigh and leg, to the heel and ankle which have been severely pained; and the connection of these symptoms with the abdominal affection is indicated by the pain shooting into the iliac region and round the hip. These pains are least felt from 4 A. M. till evening; they are aggravated before rain but not while it falls.

Case 20th. Joseph Johnston, corporal, ætat. 30. In India 8 years. Was admitted in September 1831, with severe pains in the arms and chest, increased at night, and relieved by warm bathing; the fingers and wrist swelled; pulse quick and small. He ascribed the complaint to cold, and has had no venereal complaint for a considerable time. He was cured by tartrate of antimony and a little calomel, but was too soon discharged.

Readmitted in October with pains in the arms, hip and legs, and also in the chest and left ankle. Pulse 105, rather sharp and small, tongue foul; was treated by a grain, and a grain and half of tartar emetic every hour, which relieved him, but he was not cured till his gums were made a little tender by camphorated mercurial frictions. November 2nd, discharged. Readmitted April 30th, 1832. The general pains had left him and he complained of severe aching at night in the left tibia, which was swollen behind and anteriorly, causing considerable deformity. There were no irregular swellings. Bad appetite and furred tongue. Leeches gave no relief and seemed to increase the swelling, and tension of the soft parts; the pain extended to the foot and the general health was much disordered. His gums were made slightly sore by calomel and antimonial powder, the pain left him and the swelling subsided considerably. He was again ill in June (not under my care) and had irregular bowels and stools of a light or dirty pale green colour, and his recovery was slow and imperfect. He went to duty, and returned to hospital in October: the following is the history of his illness taken from the journal. October 9th. Admitted yesterday with an aggravation of rheumatism under which he has long laboured. Pains in the legs,

shoulders, arms and hands severe from evening till towards morning and relieved by heat, while any wind distresses him. Abdominal viscera do not show any signs of irritability as on former occasions. Tongue loaded with a yellow fur, and near the root there is a deep sulcus, down the centre it is smooth and red as is the whole anterior part, except here and there where there are spots of white fur; urgent thirst, no appetite, nauseous taste in the mouth. Has pain in the region of the heart with tenderness on pressure between the cartilages; motion aggravates it. About six weeks ago, a spasmodic pain across the hypochondria came on, and after a few hours settled in the breast which had been uneasy before, and had been preceded, for some time, by uneasiness and pain in epigastrium. No palpitation or fainting fits. Breathing rather short but not influenced by position. Has rather more pain in the tip of the right shoulder than elsewhere. Pulse 86, small but harder than natural, sweats much. Urine now pretty natural. Had what appears to have been dropsical swellings after his discharge from hospital a month ago; they went away and left him suffering much from the pains. Hair dark. Much purged by jalap yesterday. V. S. ad 3xx. R Pil. hyd., pulv. ipecac., āā, gr. iij ter die. Habt. acet. colchici 3j ter die. Vespere. Bore the bleeding well, blood buffed and cupped; chest is much easier; legs rather more painful. Pulse 96, small, skin moist, three stools. Continue the medicines. Twenty leeches to be applied over the seat of the thoracic pain. Frictions to the limbs. 10th. Free from uneasiness in the chest, sweats much; pains below the knees and in the arm and hands were severe in the night, 36 respirations in a minute. Pulse 92, small. 11th. No uneasiness of chest, pains perhaps

a little better ; pulse 80, small and a little sharp. 12th. Violently purged. Stools thin but otherwise good, no griping ; pains easier. Breast easy, but there is some shortness of breath in the afternoon. Pulse 92, small and weak, sweats freely. Omitt. med. Habt. opii grj. Vesp. No stool since he took the pill. Pains rather more severe, pulse 88, feels heavy and uncomfortable towards evening, thirst, no appetite. Gums a little tender V. S. ad $\frac{3}{4}$ xij. Balneum calidum h. s. 13th. Blood cupped and buffy. Griped in the night and passed slimy stools with straining. Had an ounce of castor oil with 15 drops of laudanum which relieved the griping, and he has had no stool since. Pains always easier in the morning, abdomen not painful ; tongue much loaded ; gums tender. Milk 2 pints. Rept. ol. ricini. 14th. Much purged yesterday, stools copious, thin and of a light yellow colour, like eggs and milk mixed together. No griping with the stools. Had an anodyne draught at bed time with relief to purging. Slept better. Pains are easier which he ascribes to the dry weather. Pulse 84, urine brown, gums tender. Habt. calomel., pulv. antimon., $\bar{a}\bar{a}$, gr ij, opii gr. j ft. pil. mane et vesp. sumend. 15th. Had pain extending from the small ribs near the spine round the waist for half an hour yesterday, which was relieved by a draught. Gums tender, pains rather less severe, swelling of the bones of the legs subside, pulse 88, two stools. Hirud. xij lumb. Rept. pil. omni nocte. 16th. No return of pain of back ; pains much easier ; mouth very sore (and lips swollen) but does not run. Bowels loose and stools light coloured, ascribed to the milk diet ; pulse small. Omitt. pil. Rept. haust. acet. colchici, tinct. opii min. x sing. dosi. 17th. Did not feel so well yesterday which he ascribed to some change of the weather, but is easy

this morning notwithstanding the clouds, sleeps ill from pain of mouth. Breathing free. Bowels regular, but light coloured and thin stools are passed. Pulse 88 small. Cont. acet. colchici. ℞ Borat. sodæ ℥iss, tinct. myrrhæ, tinct. opii, āā, ℥ss, aquæ ℥iss ft. gargar. 18th. Better. Mouth very sore, slept well. Copious white sediment in the urine which is pale. Cont. 19th. No pain except of mouth. Magnes. sulph. ℥ss. Habt. h. s. tinct. opii min. L. 22d. Complains only of the mouth. 27th. No pains and the swellings on tibia are gone, mouth sore; urine pale with a copious white deposit, it is muddy when passed and smells strongly. Two measures of madeira. ℞ Pulv. ipecac. gr. j, nit. potass. gr. vj ft. pulv. ter die sumend. He was soon afterwards discharged. His recovery was perfect and he has had no complaint since. The deposit was examined and found to consist of a chalky powder nearly free from animal matter, which on being subjected to the usual tests proved to be phosphate of lime. It did not melt before the heat of an ordinary blow pipe. This deserves particular attention as the nodes had disappeared, and after a year of deformity the leg had recovered its natural shape, the morbid deposit of bone having passed off by the kidney. It is probable that the absorbents were excited to increased action in the new parts, but as the deposit continued for some time after the absorption must have ceased, the earthy matter formerly required for the nourishment of the preternatural growth, had probably been separated from the blood by the kidney instead of by the vessels of the tibia; and if this is the case it would indicate the necessity of continuing the treatment for some time after apparent cure, and of retaining the patient under observation. In all recent physiologi-

cal works it is asserted, and by inconclusive arguments attempted to be proved, that absorption goes on almost exclusively from the *interior* of bones, but this case is a sufficient proof that this is not the fact. Another case analogous to this, also occurred to me lately.

A similar circumstance which I have not found noticed in any author occurs in scurvy. It is well known that in severe cases of that disease, the callus of old fractures has been absorbed, and the epiphyses separated from the long bones, and that the urine is fetid; and a recent writer in the *Edinburgh Medical and Surgical Journal* mentions, that the urine is turbid and deposits matter like pus. Connecting these facts together, it appeared probable that the puriform deposit was phosphate of lime. An opportunity soon occurred of examining the urine of an European labouring under severe scurvy, which was at first difficult to distinguish from rheumatic pains of the thighs and calves; and it was found thick, muddy, alkaline and very fetid, and a copious white deposit was found at the bottom of the glass, which on examination proved to be phosphate of lime and mucus. This almost immediately disappeared on his getting oranges and fresh provisions, which is a fact worth much more, than the theoretical chemical objections lately brought forward against the use of lime juice in scurvy by Dr. Stevens. As these facts are new I may be allowed to point out the proof they afford, that absorption goes on more rapidly in bones than is generally supposed, and also, that they are not reduced to their elements in passing out of the body as supposed by Bostock. An opinion has been adopted by some physiologists that the animal body has the power of *generating* the earthy salt, and ingenious and careful experiments have been per-

formed on the chick in ovo, and by Prout on the comparative quantity of lime in the food of fowls and that going to form the eggs, in which he seemed to have proved, the generation of lime and the important geological inferences connected with this view of the question; but in these, the possibility of absorption of the earth of the bones of the animal has been overlooked, which will probably afford an explanation of those curious observations.

In rheumatic ophthalmy which is rare in India, and very difficult of cure by any of the common plans of treatment, mercury is a valuable remedy. The following is a very striking example.

Case 21st. A soldier, aged 26, was admitted January 26th 1833, complaining of rheumatic pains in the left sciatic notch, extending back to the sacrum and unattended with fever. He had never suffered from syphilis, but had gonorrhœa four months before. On the 2nd February the pain left the sacrum and the right eye became inflamed, painful and intolerant of light; the conjunctiva was hardly at all affected, numerous fine straight red vessels ran over the ball to the margin of the cornea, where there was a pink blush. There was latterly, slight sluggishness and tendency to irregularity of the iris and to the formation of an opaque ring round the margin of the cornea. The pain was at first of an aching character and confined to the eyeball from which hot burning tears flowed profusely, but in a few days it was only complained of for a space over the ear of the breadth of the palm, and was very violent at night preventing sleep. He derived but little relief from purgatives, emetics, leeches, lotions of different kinds, fomentations, blisters to the head and nape, quinine and occasional doses of mer-

cury, and the symptoms were worse the beginning of March; when his mouth was made sore with the effect of immediately removing the inflammation, pain and flow of acrid tears. Brownish yellow lines on the sclerotic coat and sluggish pupil remained, and the upper eyelid dropped a little, but he was able to do his duty on the 31st. During the inflammation the bowels were costive and the digestive and hepatic system disordered. I have not met with rheumatic iritis, but have no doubt that it will occasionally occur, as venereal iritic inflammation in India, differs in nothing from the same disease in England following papular eruptions.

Another cause of rheumatic pains is weakness from any acute disease, and in these the cure is brought about by restoring the general health, but still more by exercise, which is of great use whenever the patient can bear it, in almost every form of rheumatism in India. I have not met with cases such as are described in an early paper in the Calcutta transactions, in which the joints were said to be altered in structure and cured by strong exercise in a rough cart; but men who would languish for weeks in hospital often rapidly recover, provided they have resolution to continue their usual employment and recreations. This however should not be recommended without much caution; as when there is any inflammatory affection of the joints or periosteum, it is aggravated by motion; and if the pain is severe, the continued irritation of neglected rheumatism causes great emaciation, and leads to the formation of intractable internal disease. Heberden has remarked that there is no part in which severe pain does not occur without swelling, tenderness, or any sensible symptom, and

I believe this is more commonly the case in India than in Europe, and should be carefully attended to by the intertropical military surgeon, who must meet with many cases of pain of the joints of a nature he may be apt to look on as feigned disease. Many of these I have seen produce *great* wasting of the part, and other signs of real and severe disease.

Disorder of the hepatic system is a cause of painful feelings of the external parts, often existing for long periods, and attended with superficial tenderness not only at the margin of the ribs but over the bones. It is the more necessary to notice this, as Dr. Elliotson states, that the tenderness over the bones to *very slight pressure* distinguishes external from internal disease. The fact seems to be, that the external parts take on diseased actions, and that any diagnostic derived from the nature of the feeling must often be erroneous; In some severe cases of hepatitis the soreness of the skin, bones, and muscles extends over the whole right side of the chest, and gives to the disease much of the appearance of severe pleuritic inflammation, or rheumatism of the chest. In such circumstances, after free evacuations the pain and ordinary symptoms of hepatitis become more distinct, and the diffused pain and tenderness leave the patient. I have found this external tenderness to the slightest touch the *only early general symptom of fatal thoracic disease*; it is therefore necessary to be on our guard in such cases, and to observe their progress with more closeness, than the observations of the professor would lead us to think necessary. Severe injuries have been stated to be a cause of rheumatism, and a remarkable case of this kind occurred to me in a man who had received a beating from one of his com-

rades, the confinement consequent on which, reduced him to a state of debility and emaciation followed by severe rheumatism: the tibia swelled, and matter, which was afterwards absorbed, formed under the periosteum. The pain extended up the thighs, the ribs of the left side got painful, emaciation increased and the left leg was completely wasted; hepatic affection with loose greenish white stools seemed to be induced, the tongue was foul, and he had pain in the right side at times. Both the blue pill and mercurial frictions increased the purging; calomel and ipecacuan in ten grain doses were prescribed, and restored the biliary secretion and natural functions of the bowels, the pain of the side was removed by blisters, and his health was gradually restored.

The abdominal affections which occurred in this case were often observed to follow protracted rheumatic symptoms, but it was long before I was convinced that they were a sequela of that disease. At length the known fact of chronic rheumatism seldom existing long without being succeeded by great disorder of the general health, and the frequency of the connection of the same train of very peculiar symptoms with previous severe and protracted rheumatism, left little doubt of the abdominal viscera undergoing some morbid changes. The slow progress of the disease, the necessity of sending many of the patients from the interior to the coast for the benefit of change, and their consequently passing into the care of other surgeons, as well as the uncertainty of the pathology of the white diarrhœa so frequently present, threw great difficulties in the way of obtaining any accurate information, as to the nature of the organic changes or morbid actions on which the affec-

tions depended. These are by no means difficult of removal on their first appearance, and are then dependent on mere functional disorder, but they become obstinate if the pains continue long or frequently return, and organic changes sooner or later follow, and a permanent cure is then hardly to be hoped for. As the subject has not so far as I know been noticed in books, and as the nature of the symptoms themselves when arising from other causes is but little understood, it will be necessary to give short abstracts of the very lengthened histories of some cases, the termination of which was ascertained. The first instance occurred in Joseph Concannon an artillery man who had lived hard, and had been long subject to severe pains of the limbs. There were nodes on the tibia ascribed to mercury, and the pains although generally worse at night often came on in severe paroxysms, lasting 12 or 18 hours and attended with fever, in preventing which bark had no influence. An emetic followed by a warm bath, or the bath succeeded by repeated doses of Dover's powder, often removed these severe attacks. In September 1828 my attention was first directed to the abdominal symptoms, when the pains had returned with unusual violence. Diarrhœa was now complained of, and the stools were at first thin and greenish, and then white for a few days, and again green. He also complained of occasional pain at epigastrium which was relieved by leeches, and the tongue was remarkably dry and thickly coated. Purgatives were at this time necessary, and two grains of calomel and antimonial powder twice a day restored the healthy state of the secretions, removed the diarrhœa and relieved the pains. Warm baths and tincture of opium with antimonial powder were also necessary. The re-

lief was only temporary, the diarrhœa became intractable and the stools quite white, with an occasional mixture of disordered yeasty brick coloured secretion. Chalk mixture puffed up the belly, and aggravated the uneasy feelings about the stomach and throughout the abdomen. As these symptoms increased the pains left him. In December the emaciation had become extreme; early in January he could eat nothing and vomiting occurred at intervals; his pulse was rapid and feeble, and he complained of pain below the cartilages of the right false ribs. He died on the 18th January 1829. He stated that he had suffered from similar symptoms some years before, and had recovered on being sent to the sea coast. No venereal disease was known to have existed for years. *Dissection.* Viscera of the thorax healthy although he had suffered from dyspnœa. Liver much enlarged and had pushed down the stomach, so that its lower orifice was on the same line with the superior; its substance was hard and light coloured from white interstitial deposit. The gall bladder very large and distended with a light green watery bile; its ducts small. The mucous coat of the stomach redder than natural. Duodenum rather thickened and adherent to the right lobe of the liver; the intestinal mucous membrane reddish, that of the right half of the colon thickened and of a very deep livid colour, and these appearances extended, though in a less degree, into the rectum. The cause of the white diarrhœa in this case, was evidently deficient secretion of bile and increased morbid action of the intestinal mucous membrane. The morbid action of the intestine probably in part depended, in the first instance, on the liver, as its secretions were irregular before the diarrhœa became troublesome; and it is common in

the progress of severe hepatitis, for chalky purging to come on from suppression of the usual action in the liver, and is sometimes so profuse as to lower the patient's strength remarkably in a few hours. An instructive example of this occurred to me lately.

Case 22nd. A man who was thought to be convalescent from a very severe and obstinate attack of hepatitis, was suddenly seized with profuse purging. The stools appeared like pus, the pulse got feeble and rapid and the countenance was a little sunk. Before each stool the head of the colon was felt to be distended with fluid, and it was therefore evident that the matter did not flow into the colon from an abscess in the liver. On examining the stools again, they were found to consist of finely divided mucus, and it was concluded that they were secreted by the small intestine. The purging was checked; for two days the stools continued white, after which the biliary secretion was restored and rapid recovery took place. Had an abscess burst into the intestine, the pus would have reappeared in the stools on the cavity again filling up.

Baillie has described some cases of white diarrhœa in gentlemen from India, and he states that he found it connected with remarkable thinness of the intestinal coats. In the case of Concannon the mucous membrane was thickened, but the accuracy of that eminent pathologist is a sufficient proof that the contrary state of the intestines frequently exists. The following is a very instructive example of white diarrhœa succeeding rheumatism, in which the coats of the intestines were thin and otherwise very remarkably diseased.

Case 23rd. D. B. ætat. 31. In India 3 years. Has been much debilitated by repeated attacks of rheumatism

of the upper parts of the body, and on the 10th December 1829, when he was transferred on his corps moving, his appetite was bad and he had thirst; pulse was 100 and soft. He took bark and Dover's powder at bed time. December 22nd. Purging of bloody fluid with shreds, no pain; slight tenderness about the left iliac region. Tongue brown and coated, less thirst. Pulse 76, soft. Omitt. cinchon. Habt. ol. ricini ʒj. 13th. Vesp. Several stools as before, two others of *white* feculent matter. Cont. pulv. Doveri h. s. R Calomel. gr. iv, opii gr. iss, ft. pil. bis die sumend. 23rd. Stools more generally white with spots of puriform matter. 25th. Less blood in the stools, which are clayey. 26th. Stools dark yellow with a little pure blood floating on the surface. Tongue very foul; pulse 84, soft. 27th. No sleep, vomiting, many fluid stools, hiccup distressing, no pain on pressure. Cont. pil. ; haust. anodyn. h. s. Empl. vesicat. scrob. cord. 29th. Hiccup at intervals, many scanty fluid stools, partly of whitish feces, gums get tender, takes a little wine and arrow root, dark crust on tongue. 30th. Stools partly dark and watery, or thin, yellow and lumpy with some blood. Less hiccup. He got worse, with hiccup, oppression at stomach, rapid feeble pulse and died at 10 P. M.

Dissection. Lungs adherent to the pleura costalis and diaphragm, but their structure healthy. External appearance of intestine healthy. Liver enlarged and projected beyond the edge of the ribs; convex surface mottled and marked by depressions like old scars, but the substance internally did not appear diseased. Gall bladder large and full of dark bile. Coats of stomach thin, dark brown or black spots on the mucous membrane with ulcers in their centre;

vessels turgid. The commencement of the duodenum was divested of mucous membrane, and there were some ulcers in different parts of the gut, the coats of which were exceedingly thin. The jejunum thin with small ulcers on the rugæ and between them. Further down there was more vascularity, and two large ulcers at the commencement of the ilium and marks of old ulcers which had healed were observed; lower part of ilium vascular and the mucous coat was covered with a minute white papular eruption (like sagograins), some of them ulcerated in their centre. This eruption extended to the rectum. The head of the colon was thin and relaxed, with dark spots ulcerated in the centre. Ulceration extended through the whole gut, but near the rectum the sores were healing.

The aggravated nature of the intestinal affection caused the death of the patient before the liver had passed beyond the first stage of disease, when its functions are not yet permanently obstructed, and the stools exhibited a morbid biliary secretion alternating with a want of that fluid in the stools. The tubercular degeneration of the mucous membrane and consequent ulceration is a curious fact, and when compared with the following case, shows that there is a tendency to tubercular formation in the various abdominal membranes.

Case 24th. Joseph Sweeny had an attack of fever with biliary disorder in July 1829, of which he was cured in a few days, but rheumatic pains followed and distressed him while at his duty till December of the same year, when he was readmitted with severe pain and swellings of the ancles, and pain and tenderness of the tibia. No previous venereal disease or mercurial cause could be blamed for these symptoms.

Warm baths and Dover's powder relieved him at first, but they lost their effect and swellings formed on the tibia. Calomel. gr. iss, pulv. antimon. gr. iij, opii gr. j, were given in pill on the 28th and induced purging, which caused their omission on the 2nd January, but the gums had become tender and the pains were relieved. Walking increased those in the tibia. He rubbed camphorated mercurial ointment on the swellings with benefit. The end of January there was tendency to diarrhœa, the beginning of February he was allowed to go out convalescent and on the 24th returned, having drunk hard. Pains were the same. He was now much purged, his stools watery and composed of white mucus; he vomited much and there was a sense of emptiness in the bowels, but no pain on pressure. His tongue was dry, brown and parched; pulse frequent, bounding and weak. These symptoms were moderated with difficulty, the nodes increased and the pain in the right knee was severe. In April bowels were irregular at intervals, and the pain in the right knee and leg was very violent. He had become emaciated, weak and irritable, and had evening fever. In the end of the month wine of colchicum was prescribed, but in two days the stomach became irritable from its use, it was therefore diminished, and omitted the 4th day. On the 20th May passed light reddish stools. On the 27th he was very low, moaned and was covered with a cold sweat. There was some tenderness along the margins of the ribs on the 30th, vomiting, sensation of cramps in the right leg, and at the heart the action of which was violent. He was relieved by an anodyne. In June he was much better, but the middle of that month complained of soreness of the abdomen

mostly to the right of umbilicus; purging returned and stools were white, whitish brown, yellow, and sometimes viscid, dark and mixed with mucus. In July the pains left him, and he had afterwards only some numbness in the legs, but the abdominal tenderness was felt at the bottom of the abdomen, and on lying on the right side had pain of the left lumbar and hypochondriac regions and at the edge of the false ribs on both sides. The face was full, emaciation of the legs extreme, and he got faint and had cold sweats on going to the stool, in which some pus was now observed. A few leeches and fomentations relieved the pain. In August he was much the same, but rain always brought on the purging. In September had œdema of the legs, abdominal fluctuation, pain in the right iliac region, drowsiness and occasional slight delirium. On 2nd October was much purged, stools of various colours, partly of clayey feces, white matter and mucus; abdomen distended in the evenings. October 15th. Many white stools with griping and exhaustion. On 31st abdomen immensely distended with water and flatus; in great distress. There was some obstruction in making his water. He gradually sunk and died on the 27th November.

Dissection. Several gallons of water in the abdomen and some in the thorax. Lungs healthy, marks of scrophulous sores of the neck from which he had lately suffered. Heart small, a white spot on its external covering, but its internal structure was healthy. Liver small, hard and of a grey colour. Gall bladder contained thin bilious fluid; ducts large. The whole of the peritoneum both lining the cavity and viscera, studded with minute hard tubercles like flat beads of glass of the size of a pin's head. They were easily scraped

off the membrane, and in some places they were covered with a red bloody deposition, the peritoneum was very red, and the tubercles were most numerous and the redness greatest in that part of each lumbar region on which the colon lay. The stomach was small and contracted. The mucous membrane of the small intestines was red and vascular, as was that of the colon. Its coats were thick and there were a few minute ulcers on its lower portion. A few of the ulcers seemed to have healed. The small head of the pancreas was large and like white cheese; the glands of the mesentery were hard and white.

While this case was under treatment another in every respect similar, except that there had been no fever before the attack and that the hepatic symptoms were better marked, was in hospital; the patient was sent to the coast in the hope that the change might yet preserve his life, and he was not afterwards heard of.

At the time Concannon was ill, there were several men labouring under rheumatism in whom symptoms of the same kind had appeared, and at the recommendation of the superintending surgeon they were sent from Nagpore to the coast, which is the only measure permanently useful. Several of the milder cases were restored to health and some of them died, *it was supposed*, from the aggravation of the diarrhœa. I lately accidentally met with the history of two of those fatal cases, which are important although no dissection was made.

Case 25th. John Robinson ætat 25, in India 8 years. Had suffered much from rheumatic pains of the extremities especially the lower, tenderness of the sternum and occasional short cough. There was no

ground to suspect recent syphilitic taint, and he had not had much mercury except once, three years before when he had hepatitis. In 1829 the pains were aggravated and he was constantly in and out of hospital, they were mostly fixed in the shins and sternum where there was swelling, and in the elbow and occasionally in the head. The appetite gradually became irregular, he had occasional purging of light coloured stools, and evening fever. In October these symptoms had become more severe and permanent, he was emaciated and his sallow dry skin seemed too tight over the attenuated flesh; the dejections were frequent and generally white, although he occasionally passed watery greenish stools; tongue white, thirst, pulse quick, small and rather sharp. In December stools were chalky, frequently preceded by some griping, and *unmixed at any time with bile*. In January 1830 he proceeded to the coast. For six months before, he had laboured under pains and remarkably indolent superficial ulceration of the throat having no tendency to spread, and not at all like venereal ulceration. Great variety of treatment was used with only temporary benefit to the disease, but the throat at length healed. Was admitted into the garrison hospital at Masulipatam on the 11th March with pains, and he had some oppression at the chest and dry cough. Took no medicine but improved from the change of air, and was discharged convalescent on 25th March. Readmitted 13th June with white purging, nausea, irritable stomach, bad appetite and great debility. He took bitters, and on the 21st tinct. camphor. comp. ʒj was added to his mixture on account of short cough; spirits increased the symptoms but wine was beneficial. During this time the pains had nearly left him, but

on the 30th July they returned in the knees and shoulders. In August the purging increased, the stools being white and watery with tenderness to pressure about the umbilicus, and extreme emaciation. He died 26th August after nearly three years of ill health. The white diarrhœa probably depended on the same morbid state of the abdominal viscera as in Concanon, the same symptoms being present in each. It is impossible to say that the patient had had no venereal taint, but neither his previous history nor the progress of the symptoms were of that kind which usually follow confirmed syphilis; and if they are to be referred to this head, it will not take from the importance of the observation regarding the internal disease, as the cases in which these occur are an important class of chronic ails, and are in their earlier stages universally considered and treated as ordinary rheumatism. There has been ground to suspect both scrophula and mercurial action as at the root of the evil in some cases, but in others the connection could not be ascertained. The other of the two patients who died after having been sent to the coast, had other symptoms which are intimately connected with the series of diseased actions which we have seen affect the abdominal serous and mucous membranes, the substance of the liver, and the glandular mucous structure of the throat. The skin has in a number of instances taken on diseased action of a slow character ending in ulceration, such as is not uncommonly observed in this country in scrophulous leucophlegmatic subjects, and as is described by Dr. Alison and others as following long continued courses of mercury.¹⁵ In the fol-

¹⁵ I have since met with several intractable cases, in which ulceration seemed to be caused by the action of mercury in scrophulous rheumatic patients. In such examples it is difficult to say what plan of treatment should be adopted.

lowing case they were more immediately connected with the local rheumatic affections, than in any other instance I have witnessed.

Case 26th. Thomas Pearson was admitted in October 1828 with severe pains, and swelling and stiffness of the right elbow which he has had for four months. The tonsils had been painful for a month, the palate relaxed, and superficial indolent ulceration extended slowly from one tonsil to the other behind the soft palate. He had no venereal complaint for two years before the present illness. Had once a sore mouth for an attack of liver, but not recently. His hair and eyes are light and complexion naturally clear, although now sallow. On the 9th November the ulceration had spread, and the arm was worse. A grain of calomel and opium were ordered twice a day and on the 11th the gums were sore, when the pill was ordered every second night and on the 20th omitted, and the ulcer ceased to be painful and began to heal. On the 18th December the throat had again got worse, and no application to the arm or general remedies gave the least relief. The stools were occasionally very dark. From the 22d to the 31st December took half a grain of calomel morning and evening and the throat healed. A white ulcer on the back of the soft palate, only seen by raising it up, disappeared, and the pain in the arm nearly left him, but the joint remained stiff and in a state of semiflexion. On the 2d January 1829, he was allowed to be a convalescent in quarters. In the end of the month ulceration returned in the throat, ulcers were painful, of a livid color little affected by stimu-

ed; it is, however, satisfactory to know that a persevering and judicious employment of local remedies will sometimes restore the patient to health. Numerous chronic ulcers on the hips, thighs, and legs, in a scrophulous patient long subject to rheumatism, healed rapidly under a mild course of iodine and hydriodate of potassa.

lating gargles, and spread along the arch of the palate to the uvula. He had evening fever. The gums were again made sore and he went to his duty the end of February, but the arm was still painful, stiff and swollen. On the 20th March he was readmitted, with severe pain of the inner side of the left knee joint extending to the thigh, and of the elbow and right shoulder. Leeches gave temporary relief, and blisters increased the pain and irritation. The pains extended to the arms, chest, right thigh and fingers, and were increased at night and by thunder storms; his appetite was bad and his tongue white. Various remedies as wine of colchicum, turpentine, guaiac and bark were used with little benefit, and in May his mouth was again slightly affected by blue pill, tartrate of antimony and opium. In August a grain of calomel and opium were given but griped him, and the stools were green. In September, a swelling of the second joint of the third finger of right hand, which had been sometime soft, ulcerated, and left a deep white indolent sore with undermined edges. In December he was emaciated, his general health bad and he suffered from occasional evening irritative paroxysms. On the 12th January he was sent to the coast where he arrived on the 12th March; the pains unrelieved, the elbow swollen, the joint motionless, the right knee was stiff and painful, his nights sleepless and he was much wasted. He improved a little at first, but in April an abscess formed behind the knee which never healed, although it put on a healing appearance, and the right tibia became painful; he used anodynes, sarsaparilla, quinine, &c. On the 24th April vomited in the night; this was relieved by an emetic, but recurred occasionally and proved the first symptom of the fatal disease about to follow;

the bowels were yet regular. The tongue was red and perfectly clean. In May took muriate of mercury in decoction of bark. 14th June. Sore on knee painful, and the painful and swelled part of left elbow above the inner condyle ulcerated, an abscess has formed at the top of the right shoulder, and loose bone was taken from the sore on the finger. July 12th. Purging set in; stools at first dark and watery. 20th. Stomach irritable. August 3rd. Ulcers sloughy. 23d. Right foot swollen and the other knee and hand partook of the diseased actions. 28th. Stools frequent, copious, liquid, light coloured and passed without straining. Pains about the umbilicus increased on pressure and vomiting. Pulse quick and feeble. Urine high. September 1st. Stools scanty, watery *and white*, vomits thick clotted greenish matter. Purging was relieved by opium, chalk, and Dover's powder. 15th. Vomiting, and frequent scanty stools at night; they are occasionally greenish and mixed with mucus. Died exhausted on the 26th September. In a good many instances ulceration of the skin is not, as in the above example, a local disease depending on that of the subjacent parts, but is caused by the constitutional disorder. The ulceration is commonly slow, indolent, superficial, the edges thick and white, and heals at one side or in the centre and extends at the opposite margin or all round the edges. The upper and lower extremities are equally liable, and sometimes the ulcers form over the trunk. In two cases they took on a phagedenic appearance, destroying the muscles, laying open the veins of the inner side of the arm, and killing the patient by repeated hæmorrhage. The following case I saw after the ulcers had healed, and was favoured with a notice of his former history by the surgeon under whom the disease commenced.

ed, and by whom he was sent to the coast. The careful enquiries that gentleman* has long been making, into the constitutions in which Indian diseases most prevail and into the succession of these to one another, is a guarantee of the correctness of the opinion he gives, as to the absence of the ordinary causes to which we would be inclined to ascribe the disease.

Case 27th. A very corpulent man of florid habit but without mental energy was subject during 1828 to rheumatism: the end of 1829 the tendency to unhealthy ulceration commenced over the lower extremities, chest and arms; there were also nodular swellings on the bones, irregular febrile exacerbations and tendency to looseness. In January 1832 he was sent to the coast where he arrived in March. Fulness, pain and hardness with tumid belly came on during the journey; the legs were œdematous; the wrist swollen and the pains severe from 7 p. m. till midnight; severe pain shooting through the diaphragm. Ease after eating hot things. Tongue scarlet red, and moist. He was temporarily relieved by blisters, baths and Dover's powder, but they weakened him: the urine was red and scanty and abdominal fluctuation was distinct. Cold sweats towards morning. Bowels costive and stools dark. Liver projects beyond the edge of the ribs. April 11th. Severe pain in the lower part of thorax worse at night, pulse 120, very soft; vomiting, urine muddy, pale or yellow with occasional copious white deposit. 26th. Stools frequent, of various colours, watery, pale, or composed of mucus tinged with blood, or green with clusters of white substance embedded in transparent mucus. Vomiting. Four ounces of blood were drawn, which coa-

* Surgeon W. Geddes.

gulated firmly and had little serum. He died the end of May. *Dissection.* The brain was healthy, as were the contents of the spinal canal, which contained only a very little fluid such as is often found in chronic disease. Heart small, pale and flaccid. Lungs healthy. Mucous membrane of the œsophagus dark and that of intestines thin, with dark tints and slight excoriation. Great engorgement near the cæcum. Colon livid, with marks of old ulcers. Liver enormously enlarged and all its fissures very deep, the substance having increased without encroaching on them. The great fissure was almost a complete canal into which the finger could be pressed during life, and gave the feel of a collection of fluid, through which the aorta could be felt to pulsate. On the surface of the organ there were some nine or ten deep scarlike irregular fissures, from some of which fibrous processes penetrated into the substance of the liver; but that they were not real scars appeared from some natural hepatic substance being found close to some of them, from large healthy vessels passing through them, and from others not penetrating the substance of the viscus, which was seen to be *healthy immediately below them*. The structure of the liver was altered: it was partly changed into a pale white gristly substance, in which minute orange red spots were seen with a magnifier, or numerous white waved lines separated small portions of the natural hepatic matter. The convexity of the organ felt soft like wet sand, but contained no matter; the lower and back part tore like rotten leather. It appeared to me from the examination of this liver, that the marks usually considered as the scars of old abscesses are formed, by the irregular enlargement of the organ caused by its shape, the posi-

tion of large vessels, and the change of old or deposit of new parts less susceptible of distension. Inflammation may cause this, and the change has also appeared to act as an excitement of the vessels of the peritoneum, thickening it over the depression. Since the notes of this case and the conclusions suggested by it and others were recorded, I have had the pleasure of finding, that Dr. Bright has noticed the appearance and cause of the marks in nearly the same words. The white substance is probably *cholesterine* found in these livers by Dr. Bostock, and the orange deposit was perhaps of the same nature as that found by him in the bile, which was deficient of its usual ingredients. It appears that in chronic disease of this kind adhesions are rarely formed, and the liver protrudes downwards instead of towards the thorax as in acute cases. The kidneys were dark and gorged, and part of the right embedded in the enlarged liver. The coats of the urinary passages were pretty natural. The urine had deposited much white matters. A case hardly differing in any respect from the above was under treatment at the same time; he had laboured under rheumatism, got sores over the body, which had not healed at the inner part of the left arm, his pulse was frequent, feeble and irritable, there was a red patch without fur on the tongue and a red streak in its centre, the urine was pale, copious, generally with white deposit, not coagulable by heat and of sp. gr. of 1012. Some effusion took place in the abdomen, the liver became painful and greatly enlarged, and the pains in the arms and legs were severe. He had profuse sweats at night, and diaphoretics were injurious. He was several times bled, and the blood was buffy and cupped with much serum, apparently from the rheumatic dia-

thesis, rather than the slow hepatic inflammation; accordingly, the evacuations gave no relief, but his health did not seem to be injured by them, although they caused increased paleness of the countenance, and probably did ultimate injury. The stools were at first pale and of natural consistence and frequency; ultimately he was purged, and stools were slimy with traces of blood, there was tenderness about the umbilicus and in right iliac region, enlargement in epigastrium, swelled glands in the neck; and swellings of the bones under the scars of the old sores began to form, when he was sent to another station. I have little doubt that he died soon after.

Abscesses seen rarely to form, notwithstanding the extensive disease of the liver, but in one man who had long suffered from rheumatism of the joints, puffy abdomen, and occasional purging of pale yeasty stools; after recovery consequent on residence on the coast, the liver took on subacute inflammation and ended in extensive suppuration. It was, however, probably a distinct affection, although no doubt the previous disease predisposed to unhealthy action.

Obstruction and chronic enlargement of the liver and disease of the hollow abdominal viscera, are well known to follow long continued gout, and Broussais has asserted it to be a gastro-enterite with a developement "of irritation in the joints;" an assertion which may be reversed, and applied with more justice to many forms of Indian rheumatism. If the conjunction of the external and internal disease had been accidental, it is not probable that so many remarkable cases corresponding in their principal features should have been seen by one individual,¹⁶ in a comparatively

¹⁶ I proposed giving some cases of natives with similar terminations, but the paper is already too long. *Original note.*

short period; and the numerous instances in which the health was broken by long continued rheumatism, in which symptoms evidently of the same nature though in a less degree occurred, confirmed the evidence of a pathological connection. It does not seem to be confined to any particular district, although comparatively rare in stations, where simple rheumatism is little prevalent and mild. The very accurate and careful observer who communicated the early history of the last two cases, in allusion to the ulceration succeeding rheumatism observes, “that there is a class of diseases connected with a peculiar cachectic state of the body in this country, which have not as yet been sufficiently pointed out;” which so far confirms my remarks on the subject, by shewing that there has been little attention paid to it. Nor will it appear improbable, that in a climate in which the original affection differs so widely from that of Europe; in which the known complications especially that of pericarditis is so seldom present, and then in a different form; and where the liver and abdominal mucous membrane are so prone to disease, that they should be liable to take on secondary morbid actions. Some remarkable cases have occurred, in which a still greater variety of tissues have in succession been altered in structure or disordered in function, but the details are too voluminous to be introduced at present. A slight notice of two will conclude the subject. A man subject to rheumatism got pain in the cardiac region, tenderness between the ribs to pressure and some other symptoms, which were thought to be caused by chronic pericarditis. He then suffered from cough, viscid expectoration, irritable stomach, rejection of some small dark clots of blood either from the chest or from the

œsophagus, on food passing through which there was pain and obstruction.¹⁷ After some months the affection of the heart was aggravated, and a swelling formed in the groin which pulsated violently and had so much the appearance of an aneurism, that it was only distinguished from that disease, by feeling the artery on strong pressure, to be for an inch as if included in a hard cylinder painful to the touch, and probably formed by inflammation of the sheath of the vessel. The loins, right hip, and thigh became violently painful and the latter permanently flexed, a very hard circumscribed moveable swelling which did not appear to be connected with the colon and over which there was tenderness, was detected above Poupart's ligament; on the pains being alleviated, oppression at the chest recurred, bowel complaint, and discharge and violent pain of the ear succeeded, and with aggravation of the original symptoms have completely broken his constitution.¹⁸

The following is more instructive, as showing the tendency to sudden metastasis of diseased actions, in some respects analogous to those we have been con-

¹⁷ In a man of the name of Connors who was long subject to rheumatism, difficulty in swallowing and afterwards loss of power of the right arm occurred. Symptoms like those of palsy may arise from and be mistaken for rheumatism, but a mistake of an opposite description is more common. *Original note.*

¹⁸ This patient died on the 2nd May 1833, soon after the paper was transmitted to the Board, having derived no benefit from blisters and moxas to the loins and hips, extract of conium and Dover's powder, iodine, and whatever other means seemed to afford a hope of alleviating his sufferings. The moxas to the hip caused troublesome ulcers, and sores formed over the sacrum. The body was examined 4½ hours after death.

Spine. Fatty matter external to the sheath, from 6th to 11th dorsal vertebræ posteriorly, and a slight deposit of lymph opposite to the 5th lumbar vertebra. Within the lumbar vertebræ there was a quantity of bloody fluid, of which a good deal was also found within the sheath, round the cauda equina. *Head.* Some congestion of the vessels of the brain and red points on cutting into its substance, with slight effusion below the arachnoid and in the ventricles. Considerable vascularity at the base of the cerebrum and cerebellum. *Thorax.* Numerous strong adhesions of the lungs to the pleura costalis, particularly at the upper parts; many minute tubercles in their substance, a few of which contained pus. The pericardium contained a good deal of fluid, but neither it or the heart were diseased. The valves were healthy. A loose cellular substance hung from the root of the aorta, apparent-

sidering. P. Murray had sores on the penis and buboes, followed by eruptions, venereal sores over the body and great debility. In August he was convalescent. In September suffered from pains of the joints. On the 3rd October had fever at noon and again at

ly formed by a doubling of the external coat. *Abdomen.* The peritoneum healthy, as were the stomach and intestines externally. The mucous membrane of the great head of the stomach speckled with red, and slightly thickened; the small end vascular and red. Duodenum empty, jejunum contained a white secretion and its mucous membrane as well as that of the ileum red and getting paler towards the colon, where the secretion is tinged light yellow; coats thin. A few ovale ulcers, evidently of long standing, in the right colon. Some engorgement of the mucous membrane, which is also observed in the transverse colon and in the sigmoid flexure. The liver large, almost entirely white, soft, with the large veins full of thin blood. One scar like mark at the lower part of the convexity of the right lobe; over it the peritoneum is drawn into slight folds and penetrates some way into its substance, but appears to be composed of the natural cellular substance, into which it passes, and also intercepts portions of hepatic parenchyma. Bile of gall bladder thin and of an orange colour. The hepatic substance oily, and a part not dissolved in nitric acid forms a soap with potassa. White flaky substance dissolved by boiling alcohol, and deposited on cooling. Kidneys soft, vascular, and there is much grey substance in their structure. Puriform fluid can be pressed out of the secretory ducts. Bladder large and full of urine. Trachea contains much ropy mucus tinged with blood, inner membrane red. Mucous membrane of the gullet for an inch and a half above the diaphragm spotted with red vessels, and with numerous superficial chronic ulcers running from below upwards. A few vascular and slightly excoriated parts in the upper part of the tube. (See case page 52.) Below the fascia covering the right iliacus muscle a large collection of pus was discovered distending the part, so as to render the extension of the thigh impossible; this extended up along the outer edge of the iliac vessels to the two lower lumbar vertebræ, which were ankylosed, and a round carious cavity four lines in diameter penetrated nearly to the canal. This disease existed opposite to the deposit of lymph in the theca. The matter passed below Poupart's ligament to the groin, and deep between the muscles to the capsular ligament which was diseased externally, with jelly like exudation around it. It was not ascertained if the sinus penetrated the joint, on opening which the head of the bone was found loose, and the femur and acetabulum were soft and streaked with pus; some remains of union may have been broken. The cartilage was lying loose on the head of the bone. The lymphatic glands along the iliac and upper part of the femoral artery singularly altered into a white hard elastic substance; at the top of the thigh they were closely connected with the sheath of the vessels, and a little below the internal iliac, one of them had the size of a small orange; they extended above the bifurcation of the aorta, and several of the same kind, but smaller, were found on the right side.

The patient was scrophulous, and much of the diseased appearances may be traced to this taint, called into action by his long continued suffering from rheumatism. To this cause I am inclined to ascribe the caries of the spine, which could not have existed early in the disease, when the upper extremities suffered even more than the lower. *It is proper to state, that this patient was at one time suspected of exaggerating the symptoms he described himself to labour under.* The extent of disease in the liver gives some support to an opinion expressed by superintending surgeon Adams, in reference to a case of chronic rheumatism which had been under my care, and which terminated in confirmed liver disease; viz. that the great majority of cases of rheumatism arise from derangement of the abdominal viscera.

midnight with severe headach. On the 4th had a paroxysm like ague, that night became violently delirious, but could be made to answer questions. Pain of head was violent, pupil enlarged and sluggish, eyes staring, and shivering ascribed to his being frightened at his own imaginings. Leeches to the crown and a lotion containing æther relieved him; the scalp was observed to be tender, and next day a number of hard tumours (not painful) came out over it, and disappeared on the 6th. On the 7th the left side of the scalp was again swollen, with œdema over the tumefaction; he had purging of various coloured stools mostly pale, and pain and great tenderness of the abdomen. This increased till the 8th, when it left him, and profuse watery expectoration and pain at the lower part of the sternum succeeded. On the 10th violent inflammation of the larynx without affection of the fauces came on, requiring large depletion, and, at one time, I expected hourly to be obliged to perform tracheotomy to prevent suffocation. His recovery was ultimately perfect.

THE END.

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